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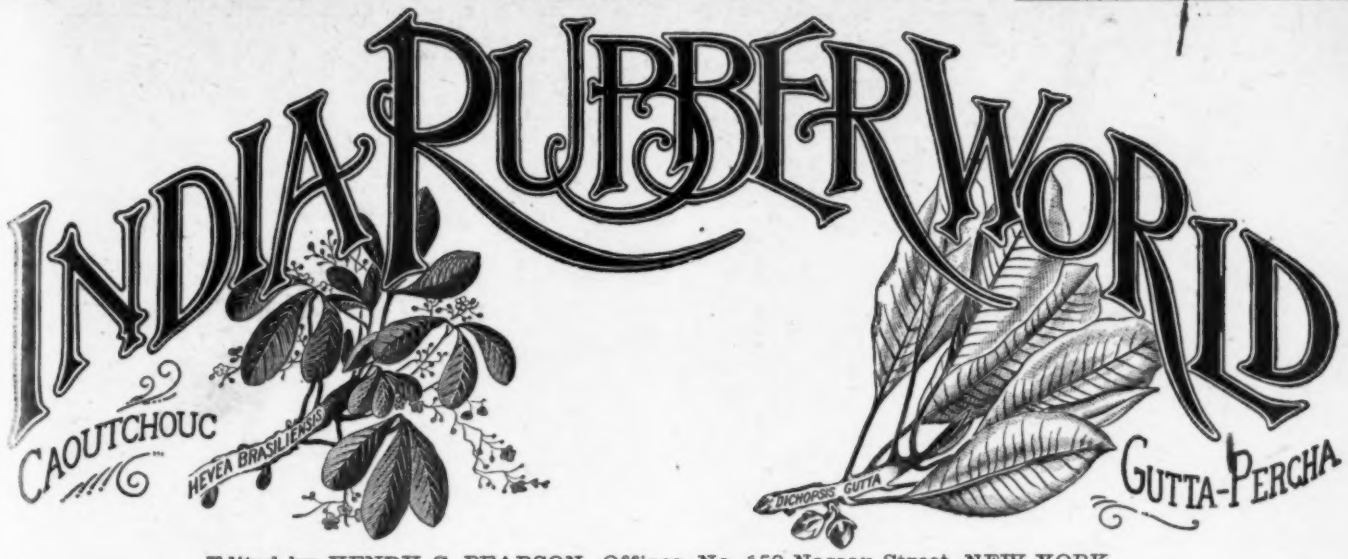

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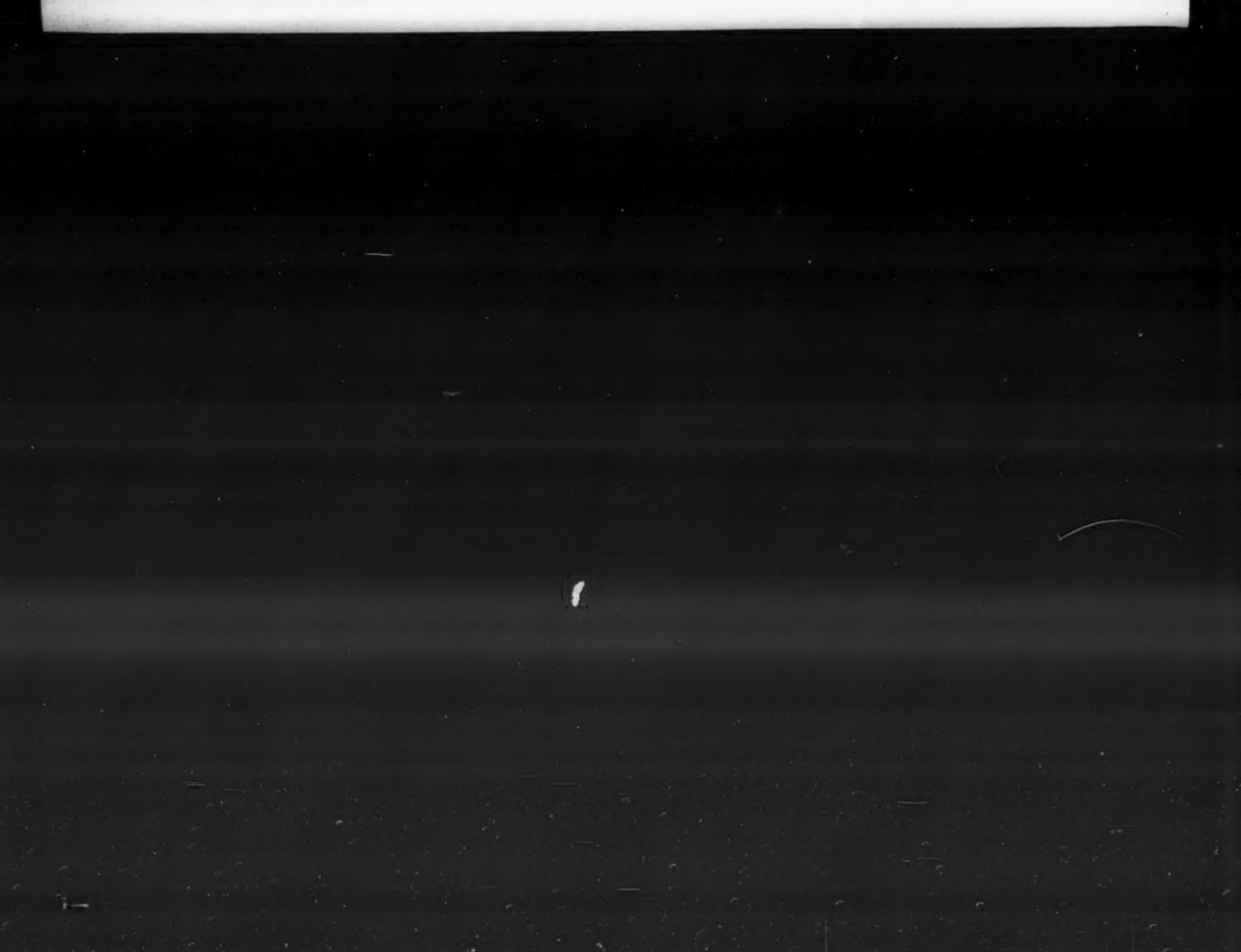

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STUDIES OF THE NATURE OF RUBBER.

IT must have occurred to every practical man concerned with the compounding and vulcanization of India-rubber, and thus confronted often with vexatious problems, that the source of much of his trouble might perhaps lie in the history of the material in his hands prior to the date of its arrival at the factory. The removal from a piece of rubber of moisture and foreign substances is comparatively easy; the real difficulty is in the proper appreciation of the mass when nothing but rubber remains. Not even the work of the most expert chemist is a sure guide to whether a certain lot of rubber to-day will yield exactly the same results in manipulation as a lot previously handled, of the same commercial grade and apparently identical in quality.

Undoubtedly the methods or processes of coagulating rubber will yet occupy a more important place in connection with the valuation of this material than has been true hitherto. It appears entirely reasonable that, all things else being equal, a difference in the treatment of two lots of rubber during the process of coagulation might lead to a difference in quality of the product when subjected to treatment in the factory, and particularly in the fabrication of the finer grades of goods. Who can say in how many cases the early deterioration of an article of rubber manufacture has been due, not to a lack of skill or care in compounding or vulcanization, but to the methods or agents employed in coagulation?

It is practically admitted by scientific experimenters with the *latex* of the rubber tree, that the nature of the process which we term coagulation is far from being clearly understood. At least there is a want of agreement as to how this phenomenon occurs, and this amounts to the same thing. If, therefore, it remains to be pointed out how coagulation takes place, the best coagulating agent for the *latex* of each particular rubber yielding species can hardly be named with certainty.

On another page appears a contribution from a careful student of the problem here referred to—Superintendent Hart, of the Trinidad botanical department—whose conclusions appear to us to merit attention. Naturally, this is a branch of study which cannot be followed in a practical way by the great majority of our readers, but it may serve to interest the factory superintendent, the manufacturer, and even the dealer in rubber goods and the consumer, to know that scientific investigation is attempting to prepare the way for a more intelligent supervision of the preparation of rubber from the initial stage.

A single sentence from Superintendent Hart's paper will indicate that the nature of his studies has a more practical aspect than might at first be apparent to the casual reader. He says:

> A sample of *latex* treated with nitric acid in excess, shows that the acid absolutely destroys the rubber contained in it for general use, and deprives it of elasticity and its power of coagulation.

It may be inferred that specimens of crude rubber affected injuriously by the coagulating agent, but not enough to produce the full effect here mentioned, may find their

way into the market, and finally to the factory, resulting in the production of decidedly unsatisfactory goods.

Another assertion in the same paper will be received with interest by those planters in America and elsewhere, who have been looking forward to the production of rubber from young cultivated seedlings. It is this:

The difference between *Castilloa* rubber taken from young branches and that from matured stems has been well observed at the Trinidad experiment station.

The latter quotation recalls an article published in THE INDIA RUBBER WORLD of April 15, 1894, by Mr. Francis Harvey, an associate member of the Institution of Civil Engineers, of England, recording his observations in the rubber districts drained by the Orinoco river. He suggested that the quality of rubber produced in some sections had deteriorated as compared with a period several years back, owing to the admixture of the sap of mature trees with that of immature saplings, and also the mixing of the gums from trees of different species, all of which he believed would be found an obstacle to the manufacture of high class rubber goods.

BRAZILIAN MONEY AND RUBBER PRICES.

WHENEVER the price of crude rubber goes up there is apt to be a complaint somewhere in the consuming trade that it is due to "speculation" on the part of the importers. In other words, that advantage is taken of the necessities of the manufacturer through unjustifiable manipulation of the market by those through whom his requirements must be filled. We do not remember, at any time, of a decline in the market being attributed to the same source, though everybody knows that in the stock markets, as well as in grain and cotton "futures" and the like, speculators are just as likely to be "bears" as "bulls." If the prices which manufacturers are compelled to pay for rubber were really controlled in any important degree by the action of the importing interests at New York and Liverpool, for instance, doubtless such "speculation" would be found at times to result in falling prices as well as rising prices at other times.

The whole subject of speculation in rubber by the interests with which the manufacturers come into contact has been discussed in past issues of this journal, and, after giving a hearing to all sides, we believe that it has been demonstrated that it would not be to the interest of the rubber importer to force his customer to pay $1 for a grade of rubber which could be sold at 90 cents and yield a fair profit. Besides, we do not believe that any such concert exists among the crude rubber merchants of the world as to make a "corner" in Pará rubber practicable. Hence, if one firm, or a dozen firms, were to hold for $1 a pound rubber which could be sold at a profit at 90 cents, it is certain that some firm, somewhere, would speedily try to effect sales at less than $1. But it is characteristic of the trade in crude rubber that, in whatever market, all the sellers at any given time are offering the commodity, under like conditions, at about the same figures. There is evidence that the importers are not trying to "squeeze" the manufacturer all the time in the fact that it is not unusual for rubber to be offered for less in the consuming markets than the current quotations on the same grades at Pará.

At the same time the crude rubber trade is speculative to a superlative degree, if account be taken of all its stages, from the time the rubber first takes shape in the hands of the *seringueros*. But leaving aside the elements of uncertainty due to variable seasons, the spread of epidemics in the rubber camps, and the other risks inseparable from doing business at such long range as in investing money in the interior of South America, there is yet a reason why the rubber collecting business is a speculative one. It is based upon the Brazilian monetary system. What business would not be speculative in the United States if, when a merchant bought a stock of goods a dollar here was equivalent to 4 shillings sterling, and when his customers came to pay their bills the dollar was worth only 2 or 3 shillings? The very possibility of such a thing happening would lead him to charge a very high advance over the original cost of his goods, in order to insure a profit.

Whoever has studied the fluctuations in rubber knows that higher or lower prices at Pará—and they are largely the basis of price quotations elsewhere—are avowedly not controlled alone by larger or smaller receipts from the rubber camps, or by larger or smaller demands for consumption. In every review of the situation appears some reference to "exchange." The Pará merchant who has a dozen important transactions to conclude in a single day must consult the rate of exchange a dozen times, if he be a prudent man. A recent letter from Pará mentions the fluctuation of exchange during ten days as ranging between 9¾ and 10⅝ pence per milreis—a difference of almost 9 per cent., and this has been a slight fluctuation as compared with some weeks. The last *Brazilian Review* received mentions exchange as having within a short time risen to 14 pence, followed by a speedy decline below 10 pence. Naturally under such conditions whoever buys rubber up the Amazon must figure on a liberal margin of profit to be certain of any profit at all; the same thing is true, though in a lesser degree, of rubber bought even at Manáos or Pará.

It would be bad enough, if, with the fluctuating value of money in Brazil, there were no speculators trying to manipulate the rate of exchange for their own advantage. But there are such speculators, just as were seen in the United States when, after the civil war, there were gamblers in the price of gold as well as gamblers in stocks both then and now. And every important fluctuation, no matter how brought about, means loss to some commercial interest. The *Brazilian Review* is very outspoken in its issue of August 28, declaring that it has been a long time since the state of the Brazilian money market "has been so distinctly dangerous as at present," and "that the present situation is the outcome of speculation does not admit of any question." Indeed, our contemporary declares that "business has become a pure gamble, and legitimate trade come almost to a standstill." And these are the conditions amid which rubber must be bought in Brazil for export.

No doubt in time Brazil will be able to fix the milreis permanently on the gold basis, at the par value of 27 pence. This will put an end to gambling in money by a few speculators at the expense of every business interest in the republic, and the only variations in exchange will be in foreign transactions, comparable with what takes place in the transfer of money between New York and London. When this reform has been achieved by the government there is reason to believe that Pará rubber will cost the consumer less, and that prices will be far more stable than now. While our own people can do nothing to bring about the reform, they might with profit watch the Brazilian situation for the illustration which it affords of the value of our own more stable monetary standards.

"SOME WANTS OF THE RUBBER TRADE."

EVERY day's mail brings to our office letters of inquiry —to say nothing of visitors who call to make inquiries—upon subjects bearing upon the rubber industry and trade. We cannot emphasize too strongly the idea that all these inquiries, whether by mail or in person, are welcome. The true principle upon which we consider the journal of any trade to be based is that it shall render a definite service to the trade which yields it a support. And how can a service better be rendered than by inviting those who may feel any need of information to make their needs known? Hence prompt and careful attention is willingly given to all inquirers, in the hope that, on the whole, some useful information may be imparted in directions where it may prove of real value.

For several months past selections from the requests for information reaching us by mail have been printed in each issue under the heading "Some Wants of the Rubber Trade." The appearance of a question under this heading does not imply necessarily that the information asked for cannot be supplied from this office; on the contrary, a reply by letter has often been sent to the correspondent before his inquiry is set in type. But we consider the publication of such letters as having a certain interest and value as showing in what direction interest is manifesting itself among beginners in the rubber industry. Our inquirers, naturally, are those to whom the subjects on which they write are new.

This latter statement will serve as a reply to some of our friends who, now and then, remark: "Why do you print such things? Surely everybody in the rubber business has intelligence enough not to need to ask questions such as appear in your pages." But everybody in the trade doesn't know everything in the trade. We have had a visit lately from a bright looking young man who has been at work running a calender. He doesn't want to run a calender all his life, but he insists that his endeavors to learn something apart from his own particular work in the factory are not encouraged by the foreman in his department, and he feels obliged to go outside the factory in order to broaden his views and his knowledge of rubber manipulation.

There is another consideration, too. There are plenty of people who feel some interest in the rubber business who have not got into it yet. Some of these no doubt will long remain on the outside—including perhaps the gentleman who called upon us within a week, to ask in all seriousness whether crude rubber could be brought to a liquid state by melting it, and what was the best apparatus for melting rubber. But another man who, a year ago, concluded to leave the factory with which he was then connected, to start a factory on his own account, and called on us to ask where he could buy crude rubber, stating that in his former position he had nothing to do with buying raw materials, has already built up a respectable manufacturing business.

Here we get to a further reason for printing "Some Wants in the Rubber Trade." These inquiries will repay reading by our advertisers, and also, possibly, by some firms who are not advertisers. They indicate that there are readers of THE INDIA RUBBER WORLD who are prepared to buy materials or machinery, and they want to know where to buy. For every reader who is in this position and who makes his wishes known in a letter, it is probable that there are several others who do not write to us. This monthly list of inquiries, therefore, is in part a suggestion to those who have something to sell that possible buyers are inquiring for the particular article for which customers are desired.

WE ARE PLEASED TO LEARN from our esteemed contemporary, the *Star*, of Rockford, Illinois, that, although "Caoutchouc gum costs 20 cents a pound," rubber goods are likely to become very much cheaper, through the use of "corn rubber," at 5 cents, in compounds. The effect upon prices of manufactured products "can be easily seen," says the Rockford newspaper, when it becomes known that the larger portion of the goods is composed of the new substitute. We understand that the editor of the *Star* is considering an offer which has been made to him for writing several large books on what he does not know about rubber.

THE BRITISH SOUTH AFRICA CO. have rendered a good service in stimulating an interest in dealing with the utilization of the rubber resources in the territory under their control, by the publication of a report by Mr. P. Lyttleton Gell, summarizing the details of governmental action bearing upon the rubber situation in all the various European countries in Africa. In nearly every case the rubber lands are regarded as a part of the public domain, and therefore properly subject to governmental regulation. It is encouraging to note that as a rule the various governments are using every precaution against wasteful methods of rubber extraction and against the adulteration of rubber, besides offering encouragment for the planting of rubber trees. For this reason Mr. Gell's report should prove of interest to those members of the trade who have been fearful of the early exhaustion of the African rubber supplies.

RUSSIA has raised the rate of duty on imports of India-rubber and Gutta-percha goods 50 per cent., and on crude India-rubber 10 per cent., in the new tariff schedule designed to increase the revenues of the empire in view of increased military expenses. This is not a matter of great concern to rubber manufacturers elsewhere, however, as the imports of goods of this class are on a small scale. The duty on imported crude rubber is still very slight.

TILLINGHAST PATENT LICENSES.

WE have been asked, from time to time, about the possibility of additional licenses being obtained for the manufacture of pneumatic tires under the Tillinghast patents, now controlled by the Single Tube Automobile and Bicycle Tire Co. There follows an official statement, which seems to cover the ground fully:

TO THE EDITOR OF THE INDIA RUBBER WORLD: In answer to your question, I wish to say that the license issued to the present licensees under the Tillinghast patents has a clause providing that the licensor will not grant further licenses without the consent of a majority of the licensees. This clause originated in the fact that all the manufacturers of tires, the men who built up the single tube industry, were or became licensees at one time; and it was thought fair, both by licensor and licensees, that further licenses should not be granted promiscuously to people who had nothing to do with the creation of the business. This seems to be an equitable idea, and, while no further licenses have been granted since the first of January [1900], it does not mean that the rule is absolutely hard and fast, because the licensees are large and generous business men, who desire only what is fair and right. They would certainly not consent to the issuance of a license to anybody who had not the required standing as to capital and character. But whether the license was granted or denied, any honorable concern desiring to make tires would be treated with perfect frankness and fairness if a license were applied for. Very truly yours,

THEODORE A. DODGE,
President.

97 William street, New York, September 12, 1900.

HOW MANY BICYCLE TIRES ARE MADE?

TO THE EDITOR OF THE INDIA RUBBER WORLD: The bicycle tire trade was more or less chaotic last season, and will probably be more so the coming one. While it is probable that the same number of bicycles were manufactured this year as were produced the preceding year, it is undoubtedly a fact that the same number was not sold, and that at the close of the past season's business very large stocks existed on hand in a great many bicycle factories. I feel quite confident that I am not far astray in stating that there were possibly 150,000 unsold bicycles on hand two months ago. This naturally meant a corresponding decrease in the number of tires used. Cycle manufacturers naturally are loath to purchase their tires until they have actual need for them on wheels that are sold.

I am also under the impression that the stock of bicycles that I mention above has been very largely disposed of to some of the large mail order houses of this country, to be held by them during the winter months, to be unloaded next spring at far away points. These wheels have all been sold stripped, and will be equipped eventually with the very cheapest kinds of tires.

I believe that I shall not be far wrong in stating that there were manufactured during the past year very close to 1,500,000 pairs of bicycle tires, and that of this number 800,000 were unguaranteed tires. The remaining 700,000 were distributed among the high class trade of both single tube and double tube types. As most of the rubber companies, with one or two exceptions, have drifted into the making of the cheaper grade of goods, the production of the better class of tires has been confined almost wholly to possibly four concerns, the great bulk going to two. T. D. M.

New York, September 20, 1900.

IS THIS RUBBER PLANTATION A MYTH?

THE San Francisco *Chronicle* of September 23 published an article charging that the Chiapas Rubber Plantation and Investment Co., with headquarters in that city, and which is said to have obtained a very large amount of money in small sums through the sale of stock on the instalment plan, is not what it is represented to be. The *Chronicle* says it has legal proof that the large rubber plantation which the Chiapas company asserts that it owns in the Palenque district, state of Chiapas, Mexico, is a myth, and that the land is arid and not adapted to rubber culture. Several prominent business men in San Francisco are directors in the Chiapas company, but the management has been entrusted to J. W. Ellsworth, who formerly was engaged in charitable and missionary work, and is said to have disposed of many shares of stock to church people.

Ellsworth is said to be in Mexico. On July 24 last the *Two Republics* of Mexico City printed an interview with him in relation to statements previously given to the same newspaper by George S. Montgomery, who claimed to be a heavy investor in the Chiapas company, said statements being derogatory to the company. Ellsworth at the time mentioned exhibited a document headed:

"Annual meeting of the stockholders of the Chiapas Rubber Plantation and Investment Co., held in the company's offices on July 9, 1900, at which all the capital stock excepting that of Mr. George S. Montgomery was present and voting, adopted the following resolution, which was introduced by Mr. E. A. Girvin, and unanimously carried."

The salient feature of the resolution reads:

"That we, the stockholders of the Chiapas Rubber Plantation and Investment Co. are not dissatisfied with the price paid for our Mexican lands, and are not disappointed at the condition of our business either at the plantation or elsewhere, but feel that our prospects are more flattering than ever before, and that we have reason to be thankful for the remarkable and unbroken success which has attended our company from the day of its organization until the present time."

The "resolution" concludes by reaffirming a promise "to plant in the neighborhood of 9000 acres of rubber trees between now and the beginning of the next planting season."

OF INTEREST TO STEAM USERS.

AN interesting study in methods of publicity and promotion is presented by the progress of the B. F. Sturtevant Co. (Boston), during the past few years. This company, devoting itself principally to the manufacture of blowers, has gradually evolved many special types designed for specific uses. It has not been deemed sufficient to merely advertise these types, but exhaustive study has been made of the conditions and best methods of application, special treatises have been prepared upon these subjects, purely educational articles regarding them have appeared in the technical press, and special illustrated lectures have been delivered before technical schools and societies. Some of these lectures, devoid of all reference to the B. F. Sturtevant Co., have been published for free distribution with gratifying results. Among recent publications are lectures by Walter B. Snow, of the engineering staff, entitled "The Influence of Mechanical Draft upon the Ultimate Efficiency of Steam Boilers," "Mechanical Ventilation and Heating by a Forced Circulation of Warm Air," and "The Application of Mechanical Draft to Stationary Boilers." Any one of these publications will be sent upon request.

THE NATURE OF THE COAGULATION OF RUBBER.

By John H. Hart, F.L.S., Superintendent Trinidad Botanic Department.

A LATE writer* on "Latex and its Functions," in the *Annals of Botany*, has followed a previous writer† in the same journal, first, in accepting a theory that the coagulation of the *latex* of Caoutchouc plants is effected by the proteids it contains passing from a soluble to an insoluble state, and, secondly, that the conditions of coagulation depend entirely upon the kind of proteid present in the *latex*.

These writers do not describe in full what *latex* is, or give an accurate analysis of its actual composition. The author of "Latex and its Functions" speaks of "pure *latex*," but does not record the degree of purity in which it was obtained or whether the purity was absolute. In the Trinidad experiments we have not as yet been successful in finding "pure *latex*." Our material has always contained matter extraneous to the composition of what is called *latex*, together with a variable quantity of water or sap, thus affecting the density in accordance with the rainfall of the period. It is, therefore, difficult to follow the reasoning used in explanation of a table which purports to record the quantity of various acids required to coagulate 100 cubic centimeters of pure *latex*; for it follows that if it possesses greater density it would produce more rubber per c.c., and consequently will require more acid to coagulate it. In fact the 100 c.c. of *latex* used in the Ceylon experiments must be a variable quantity, according to its density and the number of rubber globules it contains, and, until the weight of dry rubber a given quantity of acid will solidify or mass together is determined, the table does no more than show how much acid is needed to coagulate *latex* as used by the author.

In "Latex and its Functions" it is recorded that after heavy rains the exudation (or flow) of *latex* "is much more copious and thinner," and, this being so, it is clear that it will require a variable quantity of acid to coagulate it, and the relative value of the coagulations used can only be shown when it is proved that the *latex* used was of the same character and contained the same amount of rubber in suspension, in all the experiments. Special points in rubber coagulation are said to be, first, the regular quantity of acid required to coagulate a certain quantity of *latex*, no matter the dilution made; and secondly, the excess of acid renders coagulation impossible or incomplete. These points appear to be capable of explanation differing from that given in *Annals of Botany*; inasmuch as the statements of the author may be taken as showing that the power of the acids is exerted primarily on the rubber globules, independent of the presence of albumenoids; for rubber globules can and do coagulate, in the absence of the albumenoids in the *latex*, as well as in their presence.

In the hydro, or creaming process, and in the Babcock centrifugal process, rubber globules are separated from the albumenoids, except in so far that a minor portion of the latter may still adhere to, or be combined with them; but still the globules may be themselves coagulated by simple pressure or by mere evaporation of the adhering water. That coagulation is primarily brought about by the proteids passing from a soluble to an insoluble form, therefore, appears scarcely tenable; for although the albumen may coagulate and "gather the rubber globules," yet the latter can undergo coagulation or clotting without the aid of a coagulator of any kind, and the rubber is, moreover, of a better quality in consequence.

It is of course well known that albumenoids are coagulated by acids, but it is possible there may be some little confusion of terms when speaking of the coagulation of *latex*.

The coagulation of *latex*, when including the sap fluids, and the coagulation of the rubber globules, are functions which can be independent of each other. Seeing, therefore, that rubber is of better quality without the albumenoids, and that the rubber globules can be coagulated without their aid, it is difficult to conceive an economic reason for coagulating them in company or for the use of acids for the purpose.

Latex taken from Ceará rubber trees, if coagulated with the albumenoids in it, will in a few hours give out the well known putrid smell of albumenoid matter, while, if these are taken away, it keeps well and without odor. With regard to the second point, it is not difficult to find a reason for non-coagulation by excess of acids when the destructive character of these agents is duly considered. A sample of *latex* treated with nitric acid in excess shows that the acid absolutely destroys the rubber contained in it for general use, and deprives it of elasticity and its power of coagulation.

The definition of the word *latex*, as applied to secretions of rubber globules, is somewhat indefinite. The white rubber globules suspended in it give it the appearance of milk or *latex*, but these removed, it is milk no longer, just as cows' milk with the curds removed is no longer milk, but whey. It can be seen that while the lactiferous system may contain a certain amount of proteid matter, it is also clear that in the process of extraction the so called *latex* is mixed with a large amount of cell sap, or plant fluids, which are well known to hold such matter in solution.

The writer has before him a case in which rubber globules were consolidated or coagulated in the lactiferous tissue itself, giving an exact molding of the lacteal vessels. In this case it would appear that the rubber globules were coagulated by means other than those described in *Annals of Botany—i.e.*, by coagulation of the albumenoids, which could not in this case have mixed with the *latex*, from wounds in the surrounding cells.

It appears that much has been inferred from the different results recorded from Ceylon *Castilloa*, in contrast with that experimented upon in the Western world; and upon these results it appears, in the main, is based the statement that the trees cultivated on that island differ from the true *Castilloa elastica*.

The writer's acquaintance with the true plant made in Veragua and Nicaragua, in 1885 and 1893, leaves little room for doubt that in Trinidad we have true *Castilloa elastica*, whatever the character of the Ceylon variety may be. The *latex* of the Trinidad trees contains, when fresh drawn, one half of 1 per cent. of acidity, or slightly less, and, when allowed to stand some nineteen hours, still shows only a trifle over one half of 1 per cent., according to an analysis made by Professor Carmody, government analyst of Trinidad.

It has been mentioned previously that *latex* is spoken of in the Ceylon experiments as "pure"; but, since it is absolutely impossible to detect and pierce the lactiferous vessels, it is not

* J. Parkin, issue of June, 1900.
† R. H. Biffen, issue of June, 1898.

clear what warrant there is for the use of the word, for so far there appears to be no accurate means of ascertaining how much, if any, of the albumenoids are contained in the lactiferous system, or how much unites with the flow of rubber globules from other sources when trees are bled. So far no record has been noted of the entire absence of proteid matter from rubber, but its general presence is commonly admitted.

In regard to the oxidization or blackening of rubber which takes place (most freely perhaps with *Castilloa*), it is certainly due to the properties held in suspension in the rubber-containing fluids. That it is all due to oxydases in the *latex* is, however, somewhat doubtful, unless the word *latex* is made to cover all the plant fluids which escape when the vessels are wounded in extracting rubber; for, although heating the *latex* may prevent rapid oxidization, it does not wholly prevent it, neither does boiling the rubber after coagulation prevent its blackening. If, however, the *latex* of *Castilloa* is creamed, and the major portion of the rubber globules removed, white rubber is made, which very slowly oxidizes, but even this eventually blackens. If the remaining liquor is treated with acids, a second creaming results, which produces rubber almost black in color from the first. Further, if the rubber fluids are inspissated, it results in the production of a black sticky substance having a taste resembling quinine, which appears to be the principal oxidizing material in the *latex*.

The reason rubber from the "tree trunk," and coagulated on the trunk, does not oxidize so quickly, is the fact that the albumenoid liquors are drained off, and the rubber globules left fairly clean. With *Castilloa*, however, the albumenoids are not removed by simple evaporation or draining off, and rubber dried upon the trunk is universally black in color, soon decays, and loses its elasticity.

The difference between *Castilloa* rubber taken from young branches and that from matured stems has been well observed at the Trinidad experiment station; the rubber from young trees with stems four inches in diameter being quite different in character to the *latex*, or rubber fluids, from old trunks. At one time it was thought that rubber might be obtained by the use of solvents from young stems, branches, and leaves of *Castilloa*, and it has been stated that as much as 8 per cent. dry weight of rubber material has been dissolved out of a stem a year old, but it has since been proved to be of less value than trunk rubber, and, unless some means can be found to render it of the same quality, there appears little prospect of successful treatment of young growths.

It has been observed that some trees produce rubber of a superior quality to that produced by others of the same plantation, and therefore special care should be taken, when such are observed, to raise all seedlings from the selected trees. That this feature is not uncommon in the vegetable kingdom is well illustrated by the difference in the production of alkaloids by the cinchonas and other plants. The differences already observed incline us to believe that a close watch on larger fields will reveal much finer varieties.

Rubber fluids (a term preferred to *latex*) recently taken from young trees of *Manihot Glaziovii* barely two years old coagulated freely without a coagulator, in a test tube, within an hour after being extracted; and the resultant mass was drawn in one piece from the test tube and dried into rubber, which soon became strong with the odor of putrid albumenoids.

In the West Indies only three kinds of rubber hold out serious inducement to planters, viz.: "Pará," or *Hevea*; "Central American," or *Castilloa*; and "Ceará," or *Manihot Glaziovii*. The *latex* of *Castilloa* can readily be prepared by the creaming process, by the sand filter, by coagulation with the juices of other plants, or by the Babcock process. *Hevea* rubber can also be prepared by the sand filter, or by scorching, and the last can be prepared by simply churning or natural coagulation. Whether these systems can be improved upon by the use of acids and alkalies is yet a matter of inquiry; but the strength and quality of a piece of rubber prepared by the use of acids does not lead to the impression that such methods will be of service to the planter or manufacturer. Coagulation with alcohol is probably the method by which the purest rubber can be prepared, but at present expense forbids its use. If, however, the alcohol could be allowed to be recovered from the waste liquors by distillation under excise regulations, it is possible that this system might, later on, secure considerable favor.

The Browian movement is well illustrated by rubber globules under the microscope, and the different forms assumed by rubber globules in different plants are also worthy of note.

In *Castilloa* the cells are globular in form, but differ in size, the trunk *latex* containing the largest, which accounts for its better creaming qualities.

In *Hevea* the globules are oval, somewhat pointed at one end.

In *Ficus elastica* and *Funtumia* [the most recently adopted name for what has been known hitherto as *Kickxia*, or Lagos rubber] they are globular, while in *Manihot* they are drumstick shaped.

In all coagulation the bursting of the globules, vessels, or particles of rubber, or rupture of the surface of the particles, *must take place before they can form a rubber mass*, and the simpler the means by which this can be effected the better probably will be the quality of the produce. The bursting and coagulation of the rubber particles may be well seen under the microscope when alcohol is added to the slide, when the cover glass is pressed hard down, or when any of the acids are used.

Cleanliness, as in all other work, is essential to the production of good rubber, and rubber fluids, well cleaned of all wood, bark, earth, and all extraneous matter before they are coagulated, will produce much finer material than that allowed to contain all the albumenoids and waste matters which naturally accumulate in rubber fluids drawn from large trees.

Trinidad, August 24, 1900.

OBITUARY.

RICHARD PHILIP GORMULLY, president and treasurer of the Gormully & Jeffery Manufacturing Co. (Chicago), an important bicycle firm, died August 29, in Montreal. The company of which Mr. Gormully was the head played an important part in the development of the bicycle manufacture, with its resulting demand for rubber tires, besides which it brought out a distinct type of tire which is still marketed under the name of the "G. & J." tire, though for some time past Mr. Gormully had not been interested in this feature. He left a fortune estimated at $1,000,000, the greater part of which goes to his widow. Mr. Gormully was born near Plymouth, England, as was his partner of later years, on February 24, 1847.

DR. H. W. LIBBEY, who died lately in Boston, in his sixty-sixth year, devoted much time to making inventions, more than a hundred of which he had patented. He claimed to have been the first to spring a rubber tire into the periphery of a wheel.

EDWARD LYTTON GORSE, son of Edward H. Gorse, treasurer of the Monarch Rubber Co. (St. Louis), aged 15 years, died at the home of his parents on September 7.

THE INDIA-RUBBER INDUSTRY IN GREAT BRITAIN.

By Our Regular Correspondent.

IN such a complex trade it is not surprising that certain departments have their periods of slackness, and the present time is one of such as regards the pneumatic tire business. It is in the late autumn and winter that the greatest activity is experienced in this branch, and those firms with whom this branch forms a prominent part of the total business done are apt to find it somewhat difficult to keep their hands going until the turn of the tide. Although the greatest period of activity as regards the increased orders given out by the War office has now passed, yet those few firms who received the bulk of the contracts have still enough work in connection therewith to keep them busy until the end of the year. In the waterproof garment trade matters are pretty brisk all round, and I hear of no complaints of depression. As the Manufacturers' Association does not concern itself with the waterproof garment trade, the rivalry between the large Manchester firms in this branch is, if anything, more acute than in previous years. With regard to the porous yet waterproof cloths to which I have referred on previous occasions, it seems that Macintosh's and Moseley's are the only firms of note who have not taken up the business as supplementary to their more legitimate work, and there are many who consider that their course of action is in the best interests of the rubber trade. The special rain proof cloths as now made up and sold by the rubber companies are as a rule of the best quality and of corresponding price, and there will always remain a large demand for waterproofs from people whose ideas as to price range from 10 shillings to £1, and whose wants are best satisfied by the rubber garment. With regard to the single texture ladies' waterproofs, the cold cure vulcanizing process with bisulphide of carbon still holds its own, though the double texture goods are almost universally cured by the dry heat process at the present time. With regard to the mechanical rubber trade, things seem to be decidedly quiet, the short time which is being worked in many cotton mills in the north of England having something to do with what, compared with a year ago, must be called the prevailing depression.

CONDITION OF THE TRADE.

THE middleman in the India-rubber trade is not quite the important person he was twenty or thirty years ago, more business now going direct from the consumer to the works. Moreover, the methods of business as favored by the middleman of to-day vary in an important particular from those in vogue two or three decades back. I refer to the keeping of stock. Nowadays hardly anything, speaking particularly of mechanical rubber, is kept in stock, the orders being sent on to the manufacturer directly they are received, whereas they used to be supplied from stock on hand. The manufacturers are inclined to grumble a bit at this, as they are generally expected to turn out the finished goods at two or three days' notice, thus incurring all the risks incidental to hurry. The middleman certainly seems to profit most by the change in procedure, as he can work with less capital and, besides, does not run so much risk of loss from goods proving defective after they have been paid for. The question of opening their own retail establishments is one of importance to rubber manufacturers. Where this course of action is decided upon the firm has to reckon with the probable defection of the independent middleman as a customer, as the latter does not at all approve of the shop owned by the manufacturer. In Great Britain the most prominent firms having retail establishments —or stores, as they would be called in America—are the North British Rubber Co. and the Silvertown company, if we leave out of account the firms who restrict themselves to the proofing trade only, and who, though the owners of the shops, conduct the business done in them under a different name. Some firms who started shops have given them up, owing to strong representations from middlemen, and those who still adopt the practice have found it necessary to add to the number of their establishments up and down the country. It seems somewhat open to question whether the shop really pays, because, owing to rent and cost of management, the expenses are certainly not less than those of the middleman, thus rendering it necessary to sell on the same terms as the latter. The shop, though of course drawing the bulk of its supplies from the factory with which it is connected, is not in all cases restricted to this field, as it is well known that the managers of some of these establishments have power to buy elsewhere if they can do so to monetary advantage: such action is of course necessary where some of the goods they wish to sell are not made at headquarters, but in the cases where the goods are made by the firm it seems somewhat peculiar to buy another firm's make and sell it as your own, and it certainly supports the middleman's contention that it is not to his own interest to buy from a firm which is in active business competition with him on his own ground.

CHANGES IN TRADE METHODS.

ALTHOUGH nothing with regard to the rubber contracts appeared in the notices which the daily press gave of the proceedings of the committee, I may say that the subject duly came up for examination, the evidence of agents for some of the principal rubber firms being taken with respect to allegations of bribery and corruption. My acquaintance with what transpired being derived from a confidential source, I am not at liberty to enter into details, though in saying so much I am not desirous of creating an impression that anything of a startling nature transpired. With regard to the committee generally, business men have been rather amused at the expressed surprise of the members that anything in the nature of bribery should exist. Is it not rather like affectation to ignore the fact that bribery in some form or other is rampant in business generally, and has it not its counterpart in the "influence" which is exerted in the favor of candidates for professional or political posts? But this is a wide subject and its further discussion would lead to the inclusion of matter outside the province of this correspondence.

WAR OFFICE CONTRACTS INQUIRY.

THE address which Professor Charles F. Chandler, as president of the Society of Chemical Industry, gave at the annual meeting of the society in London, drew forth encomiums from the daily and technical press. It treated more or less in detail with the bulk of the industries of the United States in which chemistry has a bearing. His references to India-rubber did not, however, contain anything of a practical nature to invite comment, being more in the form of a historical summary. In another section he made an announcement that is not without prospective importance, and this was in reference to the yield of natural gas, this product, it would seem, being now yielded in diminished

PROFESSOR CHANDLER.

quantities compared with a few years ago. Its importance as far as our trade is concerned lies in the fact that it is now practically the only source of the light carbon black; a product which once made and sold in Great Britain at from 2 to 3 shillings per pound is now retailed from America at about 9 pence.

EXTERIOR FINISH OF GOODS.

IT used to be a common saying among British manufacturers that German rubber goods were of poor quality, and owed their increasing sale to attractiveness of superficies. Without committing myself to an endorsement of the former part of this statement, I candidly confess that the latter has a good deal of truth in it. It used to be a sore point with our makers of good quality tubing that the German brands sold better because they had a better appearance. Rightly or wrongly the dealers at the present day attach considerable importance to the smooth and glossy exterior of tubing and hose for various purposes, and it is gratifying to be able to say that our manufacturers have of recent years risen to the occasion. That all have not attained to the same level of excellence is clear, however, from the complaint a manufacturer made to me the other day, that he could not sell a certain class of hose in large demand although the quality and price were right. A British competitor, he said, got the bulk of the business merely by having a better finish on his goods. No doubt instances of this sort of thing could be multiplied and the remedy obviously lies in the greater attention to detail on the part of those who at present suffer from the defection mentioned. Not that I personally attach much importance to outside appearance, which may often be but a cloak to hide iniquity within. I read in the papers recently that during some experiments with liquid air at the Paris exposition a piece of India-rubber was frozen and broken up like pipeclay. Well I have seen pieces of rubber tubing with a beautiful finish that could be broken almost as easily, and not at —191° C. but at the ordinary temperature of the air.

TRADE LITERATURE.

IN a recent paper read before the Society of Dyers and Colorists Dr. Carl Otto Weber gives a table of results showing the exceedingly injurious action that even the smallest amount of copper in the dye of a cloth can exert upon rubber in the case of proofed goods. At this time of day it seems somewhat like preaching to the converted to elaborate the point, as the attention which has been paid to it by previous experimenters has long ago led the leading manufacturers of cloth for waterproof purposes to abandon the use of copper salts as mordants in obedience to the dictates of the rubber manufacturers. There are, however, many points of detail in the paper I am referring to, which will deserve the attention of those immediately concerned, not the least important of them being the different effect of dry heat and cold cure on the various coal-tar dyes which are in use at the present time. In some cases one method of curing will prove much more satisfactory than the other as far as fastness of dye is concerned, while the general effect of copper or grease is shown to be much less in the case of dry heat cure than in that of cold cure. The danger of copper, it is stated, lies in the fact that part of it in the cold cure process is converted into cupric chloride, which oxidizes a certain part of the rubber and remains behind as cuprous chloride, this being rapidly reconverted into cupric chloride by atmospheric oxygen. Oxidation of the rubber now proceeds again and this cycle of reduction and oxidation goes on until the whole of the rubber is destroyed. This explanation is an interesting and important one as far as it goes, but it is obviously insufficient to explain the varions other cases of the destruction of rubber by copper where chlorine in any form is absent. The limitations of space preclude my making more than a bare reference to the important papers on the Nature of Rubber, which J. Minder, of Moscow, has recently contributed to the *Gummi-Zeitung*, but it will be acknowledged by those who have perused them that they embody the results of patient observation and cogent reasoning. Whether all his conclusions will meet with general acceptance at the hands of others is a matter on which I do not care here to express a decided opinion, but even those who may disagree with him will, I feel sure, be unanimous in approval of the course he has taken in making public the conclusions he has come to in his endeavor to solve some of the obscure points which still abound in the manufacture. To refer for a moment to one point which he treats at length—that of porosity or blowing—I quite agree with him that there is a tendency among manufacturers to ascribe this solely to dampness in the rubber or in the chemicals and quite to overlook the important part which the struggles made by the air occluded during mixing may play in producing the undesired effect. This point, by the way, has also been recently referred to by J. B. Höhn in the same journal, and both authors agree that the action of the air is more prominent in the cases where the goods are undervulcanized. The obvious remedy, says Höhn, is not to blow off the steam at the end of the vulcanization, but to close the steam valve, the vulcanizer not being opened until the pressure in it has gradually been reduced to zero. I give this statement without any further comment.

THE DISASTER AT GALVESTON.

IT has been most creditable to the spirit of the American public that, immediately after the news became known of the great destruction of life and property by the storm which visited Galveston, Texas, early in September, and the destitution of the survivors, measures were taken throughout the country to afford relief. The following contributions to the relief funds raised in New York have been noticed in the daily newspaper reports, besides which doubtless many other rubber houses, both in New York and in other cities, were contributors:

American Hard Rubber Co.	$100
Empire Rubber Manufacturing Co.	25
Goodyear Rubber Co.	100
Goodyear Vulcanite Co.	25
Gutta Percha and Rubber Manufacturing Co.	250
Hodgman Rubber Co.	50
Hood Rubber Co.	50
I. B. Kleinert Rubber Co.	100
Manhattan Rubber Manufacturing Co.	100
New York Insulated Wire Co.	100
Otto G. Mayer & Co.	100
Peerless Rubber Manufacturing Co.	250

From all accounts it is evident that the devastated city will speedily be rebuilt and in a more substantial form than before, as proved true of Chicago, after the terrible fire of 1870. Galveston has already become the fourth in importance among the exporting cities of the United States, owing to her advantages of location; and these same advantages will exist as in the past. Particularly is it an important outlet for grain, and not only will the grain elevators lately destroyed have to be rebuilt, but there is every reason to suppose that the several new elevators projected before the storm will be built, as if no disaster had occurred. All of this means a probable good demand in the near future for rubber elevator belting and conveyors.

THE Continental Caoutchouc and Guttapercha Co. (Hanover, Germany) are mentioned as having an order for a balloon 85 feet in diameter.

"LEADING RUBBER FACTORIES OF GERMANY."

IN introducing the two communications which follow it may be proper to say that THE INDIA RUBBER WORLD, of course, has no interest in making one rubber factory in any country appear more important than another, but is concerned only in the publication of such facts regarding each as may prove of interest to the trade in general. The amount of available information in print regarding the rubber industry in Europe is limited, and it is not surprising that, in the first attempt to combine in a single article a summary of the more important facts in connection with the "Leading Rubber Factories in Germany," some mistakes should have been made, even by a correspondent who took pains to visit the factories. We welcome the corrections here stated, and hope to be able, from time to time, to record many further facts bearing upon the same establishments that will both interest and prove of value to our readers.

TO THE EDITOR OF THE INDIA RUBBER WORLD: I am a reader of your interesting journal, and have read with much interest the article on the "Leading Rubber Factories of Germany," in your August issue. Your correspondent, however, does not do full justice to our local rubber works, the Vereinigte Gummiwaaren Fabriken, Harburg-Wien, as he places this firm as second in importance to the Continental Caoutchouc und Guttapercha Co. (Hannover), while the fact is that the former is not only the largest in Germany, but, with the exception of the Russian-American company, the largest on the continent of Europe.

I enclose a copy of the balance sheet issued by the Vereinigte Gummiwaaren Fabriken, Harburg-Wien, in 1899, from which you will see that the working capital of this concern is 6,000,000 marks, with a reserve fund of 3,500,000 marks, so that they are working with a capital of nearly 9,500,000 marks, while your correspondent gives the working capital of the Continental Caoutchouc und Guttapercha Co. as only 2,400,000 marks.

Your correspondent also gives special mention of the "Continental" and "Excelsior" tires, but they are by no means the only tires which have a great reputation in Germany, for the "Harburg-Wien" tire has also a great reputation in this country, and is met all over the continent, and especially in Norway, Sweden, and the north of Europe.

The Vereinigte Gummiwaaren Fabriken, Harburg - Wien, have also a worldwide reputation for their balls and balloons and mechanical goods. They are especially renowned for their hard rubber or vulcanite goods, particularly for electrical purposes, and are famed for the accuracy of workmanship displayed in the latter articles. Most of the motor cars, not only in Germany and Austria, but also in France, are fitted with accumulator boxes supplied by the Vereinigte Gummiwaaren Fabriken, Harburg-Wien.

As regards the output of rubber goods in Germany, I see your correspondent gives Hutchinson & Co., in Mannheim, as the largest and most important manufacturers of rubber shoes in Germany, but this is not correct, as our local firm are by far the largest manufacturers of rubber shoes in Germany. Not only have they a reputation second to none in Germany, but the enormous export trade which they do in this article all over the world, including England, testifies to the high esteem in which the Harburg made goods are universally held. I should say that the output of the Harburg rubber shoes is at least ten times as great as that of any other firm in Germany.

I trust that you will give my letter a place in the columns of your interesting journal, and remove any false impression that might be formed by a perusal of the article on "Leading Rubber factories in Germany," to the detriment of our leading local industry. I am, yours truly, ALEX. J. GUTHRIE.

Kaserueurasse No. 7, Harburg a/d Elbe, Harburg, Germany, August 30, 1900.

TO THE EDITOR OF THE INDIA RUBBER WORLD: In your issue of August 1, we noticed with great interest your communication concerning our works, and beg leave to point out a few slight mistakes.

1. Our factory was not founded in 1875, but in the year 1872, and in the summer of 1873 we commenced manufacturing.

2. The English word for *patent-platte* is not "patent plate," but "fine cut sheet."

3. Instead of "in addition to 18 steam boilers of over 1200 horse power," read "18 steam engines."

4. We do not consume yearly 300,000 cubic feet of gas, but 300,000 cubic meters, or about 9,000,000 cubic feet.

To the remarks regarding the arrangements made for the welfare of our employés might be added the following particulars: Every workman or woman, after having been employed for 25 years in our factory receives, besides a silver medal, a gratification of 300 marks in cash and an annual additional salary of 100 marks for the time they remain in our service. Thus far 26 persons have received this gratification. Furthermore, all our work people receive, after the yearly dividend has been declared, a gratification for the previous year amounting to 40 marks for each man, or 20 marks for each woman, who has worked for a whole year, and a proportionate amount if they have worked for less than a year.

CONTINENTAL-CAOUTCHOUC-& GUTTAPERCHA-COMPAGNIE.

Hannover, Germany, August 11, 1900.

BALANCE SHEET, JUNE 30, 1899.

VEREINIGTE GUMMIWAAREN FABRIKEN, HARBURG-WIEN.

ACTIVE.		PASSIVE.	
Fixed Property.....M	2,486,661.12	Share Capital.....M	6,000,000.
Land..... 840,895 57		First Emission..... 4,500,000	
Water power..... 179,767.90		Second Emission..... 450,000	
Buildings..... 1,465,997.65		Third Emission..... 1,050,000	
Movable Property.....	1,507,050.23	Reserve Fund Account.....	3,101,865.
Machinery..... 1,201,219 95		Second Reserve Fund Account	375,250.44
Utensils and Furniture. ... 305,830.28		Security Account:	
Material and Manufactured Goods..	4,053,330.98	Hypothecated for bank credit, not at present in use..... 430,000	
Raw Material..... 2,587,408.11		Dividend Account.....	2,016.
Finished Goods..... 1,465,922.57		Dividend accounts outstanding for 1898-98.	
Cash, Bills of Exchange, and Effects.	252,147.25	Credits.....	1,367,470.26
Cash..... 36,063.08		Profit and Loss Account.....	886,644 67
Bills of Exchange in hand.. 213,726.29		Net profit for 1898-99.	
Stock..... 2,357.88			
Debits.....	3,351,056.79		
Patent Account.....	63,000.		
Total.....M	11,713,246.37	Total.....M	11,713,246.37

DURING a recent month the American Steel and Wire Co. exported over 2800 tons of wire, 1367 tons going to Buenos Aires alone. American exports of wire are confined to no one class, but are beginning to include wire for electrical use, and it is only reasonable to hope that ultimately foreign buyers of the latter class of wire may find it economical to have any insulation required done in the United States. Exports of electrical material are also becoming important.

LITERATURE OF INDIA-RUBBER.

REPORT ON THE STATE OF AMAZONAS, BRAZIL. [NO 530 MISCELLANEOUS Series. Diplomatic and Consular Reports.] Foreign Office, London: 1900. [Paper. 8vo. 43 pp.]

THE whole commercial importance of the immense district of Amazonas—of which Manáos is the capital—may be said to depend upon the extraction of India-rubber, for which reason the report before us naturally is devoted to information bearing upon the nature and extent of the supplies of Rubber, and the outlook for the future, together with facts concerning the population, laws, business conditions, and the like, such as would enter into the calculations of an intending investor in the Rubber business. Vice Consul Temple, the author of the report, writes in a style which is convincing of the accuracy of his information, and his work is interesting and valuable, though many of its details have appeared at various times in the columns of THE INDIA RUBBER WORLD so fully that they need not be reproduced here now. Some of his conclusions are worth noting, however. He believes the Amazonian Rubber supply to be practically inexhaustible, but the trees are so widely scattered that, to meet the constantly growing demand for Rubber, it becomes every year necessary to work farther inland, and this fact, coupled with the scarcity and unreliable condition of the native labor, prevents a great annual increase of output and operates against declining values.

IN CURRENT PERIODICALS.

LES Recherches de M. Parkin sur le Caoutchouc et les Caoutchouiters. [Conclusion of a summary and review of J. Parkin's studies of India-rubber at the Ceylon botanic gardens.]=*Revue des Cultures Coloniales*, Paris. VII-56 (July 5, 1900.) pp. 408-411.

Notes on India-rubber. [Compilation from and review of the report on J. Parkin's experiments, published in Circulars 12-14 of the Ceylon botanic gardens.]=*The Indian Forester*, Mussoorie. XXVI-7 (July, 1900.) pp. 313-329.

The Tapping of Rubber Trees in the Charduar Rubber Plantation, Assam, 1899. [Extract from the Assam administration report.]=*The Indian Forester*, Mussoorie. XXVI-5 (May, 1900.) pp. 175-179.

Notes sur une Liane a Caoutchouc de l'Indo-Chine. [Extract from the *Bulletin économique de l'Indo Chine*, on the plant yielding the rubber exported from Tonkin.]=*Revue des Cultures Coloniales*, Paris. VII-57. (July 22, 1900). pp. 437 439.

Cultivo de la Goma Elastica ó Hule [en Ecuador]. [Extracts from a publication in Spanish on planting rubber and extracting the product and preparing it for market.]=*Monthly Bulletin* of the Bureau of American Republics, Washington. IX 1 (July, 1900). pp. 143 146.

Kautschuk von Deutsh-Ostafrika. [A comprehensive review of the native Caoutchouc sources in German East Africa, statistics of exports, and experiments in the cultivation of native and exotic species.]=*Der Tropenpflanser*, Berlin. IV-8 (August, 1900.) pp. 367-378.

Increase in the Use of Gutta-percha in Electric Cable Building. By Hawthorne Hill.=*Electrical Review*, New York. XXXVII-11 (September 12, 1900.) pp. 260-261.

The Future Supply of Gutta-percha. [Reprint of an editorial in London *Engineering*, urging the importance of protecting the trees from extinction by careless treatment.]=*Electrical Review*, New York. XXXVII-5 (August 1, 1900) pp. 110-111.

L'Avenir de la Gutta-percha. ["The Gutta percha Prospect"—translated from a German work on tropical planting by H. Semler, showing the diminution of the Gutta-percha supplies.]=*Revue des Cultures Coloniales*, Paris. VII-59 (August 20, 1900.) pp. 504 506.

L'Arbre a Fausse Gutta de la Casamance. By Aug. Chevalier. [Relates to a Gutta producing species (*Alstonia scholoris*) in West Africa.]=*Revue des Cultures Coloniales*, Paris. VII-59 (August 20, 1900.) pp. 492-494.

Les Méthodes d'Analyse du Caoutchouc. [Condensed from a series of articles contributed by Dr. Rob. Henriques to various scientific publications and reprinted in the weekly issues of the *Gummi-Zeitung* in 1899.]=*La Gazette Coloniale*, Brussels. II-32, 34-35 (August 12, 26, September 2, 1900.)

OTHER PUBLICATIONS RECEIVED.

INDUSTRIAL TRENTON AND VICINITY. ISSUED BY AUTHORITY of the Board of Trade, City of Trenton, N. J. Designed, compiled, and published by George A. Wolf, Wilmington, Del. 1900. [Cloth. 4to. 92 pp.]

A VERY complete and attractively gotten up record of an important industrial center. Several pages are devoted to the rubber factories of Trenton, eight of which are illustrated. The capital invested in the rubber industry is stated at between $2,500,000 and $3,000,000, and the annual sales at $4,000,000.

NATIONAL NEWSPAPER DIRECTORY AND GAZETTEER. ISSUED annually. Boston and New York: Pettingill & Co. 1900. [Cloth; large 8vo; 800+258 pages; colored maps of the states; price $5.]

A convenient and well arranged list of the newspapers of the United States, and business information regarding the towns in which they are published, gotten up by a long established firm of advertising agents.

INFORMATION Respecting United States Bonds, Paper Currency, Coin, Production of Precious Metals, etc. [United States Treasury Department, Circular No. 113.] July 2, 1900. Washington: Government Printing Office. 8vo. 87 pp.

The Russian Empire and the Trans-Siberian Railway. [Compiled by the Bureau of Statistics, Treasury Department.] Washington: Government Printing Office. 4to. iv+2503-2599 pp. and map.

Leading Industries of Cincinnati, Ohio. Published by the Cincinnati *Enquirer*. 1900. 8vo. 95 pp.

A Treatise on the Cultivation and Curing of Cacao. By J. Hinchley Hart, F.L.S., superintendent of the botanical department of Trinidad. Second edition. Port of Spain: The *Mirror* office. 1900. 8vo. vii+117 pp.

ONE TRADE MARK FOR HALF A CENTURY.

THE trade mark "Wicapee" has been used on goods manufactured by the New York Rubber Co. continuously since the incorporation of that company, back in 1851. There are two ways in which use is made of a trade mark as a means of getting business. One is by bringing out a new name every now and then, without regard to whether a new article is being produced, in the hope that buyers will be attracted by the novelty of the trade mark and thereby become customers, if only for one trial. Sometimes, by changing a trade mark, the attention of the trade may be diverted from a line of goods which has proved unsatisfactory. The other way—and it seems the preferable one—is to establish the quality of a given line of goods, so that once a buyer is to become a continual buyer, and then to adopt a permanent trade mark to aid consumers in selecting the particular line that they want. When a firm can point to the use of the same trade mark on a line of goods for half a century, as is the case with the company above named, it is not difficult to determine to which of the two classes of manufacturers they belong.

RUBBER GOODS IN TURKEY.—An Austrian consular report from Monastir says: "Goloshes and elastic webbing are the principal rubber articles imported. Goloshes are mostly of German and English origin. Elastic webbing of English origin is preferred, Germany and Switzerland following. The most salable line is black, with a white or fancy pattern back."

WATERPROOF wading drawers for children are mentioned as having a good sale at British seaside resorts. They are seen sometimes in the United States, but the demand is small.

THE EXPLOITATION OF RUBBER RESOURCES.

RUBBER ENTERPRISES IN VENEZUELA.

TO THE EDITOR OF THE INDIA RUBBER WORLD: We should be very greatly pleased if you could help us in securing some information in regard to the machinery, apparatus, and processes most recently developed and now in practical use for the extraction of rubber, not only from the trunk in the usual way, but also by utilizing the rubber sap contained in the leaves, bark, branches, and dead trees. We should like full information and estimates for complete plants, capable of extracting up to 3000 pounds of refined rubber in ten hours. As it is proposed to undertake the exploitation of rubber on a very extensive scale, under the auspices of a large company, which proposes to establish a number of plants simultaneously, it is well worth while to give this matter some attention.

ASSOCIACION NACIONAL DE MANUFACTUREROS,
Caracas, Venezuela, September 8, 1900. Per RUDOLF DOLGE.

A PANAMA RUBBER PLANTATION.

TO THE EDITOR OF THE INDIA RUBBER WORLD: I have read with interest the article appearing in your paper of March 1, on "The Present Status of Rubber Planting," and I should like to bring uuder your notice the rubber plantations of the Las Cascadas Plantation Co., Limited, which are situated at Las Cascadas, in the district of Emperador, department of Panama, republic of Panama.

This plantation has been in existence since January, 1890, when the then proprietors planted 40,000 India-rubber cuttings, none of which has yet been tapped, and they have been adding to these year by year. They also have, as you will see by the enclosed reprint from the Colon *Telegram*, a large quantity of coffee and cacao trees, the majority of which are now bearing.

I quite agree with your remarks that rubber is a good investment, and I may state that a company is now being formed with a capital of £100,000, divided into 100,000 shares of £1 each, whose registered offices will be at the address given below, to take over the Las Cascadas plantation, the proprietors of which have agreed to accept the whole of the purchase price of £65,000 in fully paid up £1 shares. Yours truly,

T. HARRY HARRISON.

1, Piccadilly, Manchester, England, September 7, 1900.

[THE article from the Colon newspaper referred to consists of a report of an investigation of the estates by J. W. Humphreys, of London. The starting point on his visit was Las Cascadas station on the Panama railroad, and his journey took him across the partly excavated Panama canal. A favorable report is given in regard to the rubber trees (*Castilloa elastica*) and also the coffee and cacao. The article also mentions O. B. Schaffer, of Cleveland, Ohio, as the president of the estate and the man "to whose untiring energy the success of the plantation is now due."—THE EDITOR.]

DEVELOPMENT IN BOLIVIA.

THE wealth of the rubber resources of Bolivia has been demonstrated fully, but they remain closed to the world in large part because (1) of the sparse population and (2) lack of capital in that republic, but still more so because (3) of the lack of convenient means of transportation. The only means of transportation supplied by nature is the outlet through the river Madeira into the Amazon, and this is rendered almost impassable by numerous cataracts. From a Bolivian source comes news of a French undertaking to build a railway connecting the headwaters of the river Acre with those of the Madre de Dios, the advantage of which will be that the whole navigable river system of Bolivia can then be connected to the Acre, which discharges into the Purus, and that into the Amazon—thus giving Bolivia access to the Atlantic seaboard without reference to the Madeira. The Acre district now exports about 2000 tons of rubber yearly. It is estimated that the opening of the region which the proposed railway would make possible would soon increase this amount to 20,000 tons yearly.

CONCESSIONS FOR GATHERING RUBBER.

THE government of Venezuela has granted to Señor Juan Dall 'Orso, of Maracaibo, a concession for exploiting India-rubber and other products on 15 square leagues of government lands in the district of Colón, state of Maracaibo, for a period of fifty years. He agrees to pay 40 bolivars (=$7.72) for each 100 kilograms (=220 pounds) of Rubber exported; also, to distribute seeds of the Pará rubber trees among the planters of that district. A concession covering 18,662 acres has been granted to Señor Alejandro Ortega Martinez, in the same state, on the same terms.

Maximilian Doremberg has obtained a concession for the exploitation of India-rubber, Chicle, and timber in the department of Palenque, state of Chiapas, Mexico, obligating himself to pay to the government $24 (silver) per ton of Rubber and $18 per ton of Chicle exported.

EXPORT DUTIES ON RUBBER IN PERU.

A DECREE of the Peruvian government dated May 23 provides that for rubber lands for which concessions are granted by the minister of public works a rental shall be paid of 2 *sols* per *quintal*, or practically $1 per 100 pounds, for all rubber extracted. In addition, an export duty is imposed of 5 cents per kilogram on Caucho and 1 cent (?) fine or Jebe rubber, there being 100 cents in the *sol*, worth 43.6 cents, gold.

MEXICAN NOTES.

THE Tabasco Commercial Co., with headquarters at Springfield, Massachusetts, are developing a tract of 15,000 acres in the state of Vera Cruz, Mexico, between Coatzacoalcos and Frontera, cutting mahogany and preparing to plant rubber and other crops. Daniel Morgan, late United States treasurer, is president of the company, and Corey F. Wood, of Springfield, is secretary. Mr. Wood was lately in Mexico, when he employed J. N. Brown, of Mexico city, to superintend work on the plantation.

=The Scott-Chisholm Plantation Co. has been organized at Baltimore, Maryland, for the purpose, principally, of engaging in the cultivation of rubber, if a suitable location can be found. It includes Thomas A. Scott, of Cadiz, Ohio, one of the owners of the Scott-Rogers tire, which has been described in THE INDIA RUBBER WORLD, and who is interested in the manufacture of other articles involving the use of India-rubber, including an ingenious pea hulling machine now in wide use. The *Mexican Herald* of September 1 noted the arrival of Mr. Scott in the city of Mexico, with a view to studying the outlook for rubber culture in that country, and possibly also in Nicaragua.

=THE INDIA RUBBER WORLD will welcome any reports of progress made in the development of the various India-rubber plantations in Mexico of which mention has been from time to time in these columns.

THE GOLF BALL TRADE.

A NEW RUBBER AND GUTTA GOLF BALL.

CONCERNING a new golf ball, of American invention, and which will be described fully in THE INDIA RUBBER WORLD at the proper time, the golf reporter of the New York *Sun* says:

"The newest golf ball is a 'bounder.' Nothing like it has ever been known in the game. In appearance, sizes, and weights, the new ball looks the same as the standard Gutta-percha ball, but the resemblance is only skin deep. The skin is a shell of pure Gutta-percha, a fraction less than an eighth of an inch thick, which is compressed in a mold to fit like a glove over the inside part of the ball. The heart of the ball is a small cube of Gutta-percha. While this is soft, the end of a thread of the best Pará rubber is stuck in it. As the Gutta hardens it is tightly wrapped with the rubber thread, much as a baseball is wound with cord, until the desired dimension is attained. The next process is to mold on the shell, when, after the usual coats of white paint, the ball is ready for play. The ball is now practically perfected, but none will be put on the market until next spring. The cost will be about twice as much as the regular ball. The rubber filling adds greatly to the resiliency of the ball, and the inventor claims that an ordinary player may easily drive from 240 to 300 yards every time. Iron shots carry in the same way, and the ordinary cop bunker or trap is not a pitfall, for the ball usually bounds over all obstacles. In putting the lightest tap will send the ball the length of the green.

"'The inevitable result,' said one of the firm to handle the ball next spring, 'of the use of our ball will be that all the golf links must be lengthened.'

"All amateurs who have tried the ball concede that nothing like it has ever been seen for carry and roll. One player, who has tried the ball in its different stages of development, asserts that a slugging driver cannot get a longer average of distance with it than an ordinary ball, but that it improves vastly the carrying power of a player who has little strength in a swing. Should it come into general use the game would be revolutionized, if one-half that is claimed for the new ball be true."

NOW MANY GOLF BALLS ARE USED?

THERE died in Boston lately a newspaper writer of many years standing, who had devoted much of his time to writing on subjects of which he really knew nothing, with the result that his readers learned a great deal that "isn't so." One of his last contributions to the press, which related to golf balls, obtained a particularly wide circulation, being copied wholly or in part all the way to the Pacific coast. Drawing from his inner consciousness a statement of the number of golfers in the United States, he next learned from the same source how many golf balls each player uses, from which he showed the annual consumption of golf balls in the country to be 21,600,000—representing a great deal of money to the golfers, and accounting for a large consumption of Gutta-percha. The latter suggestion caught the newspaper editorial writers, who have worked it for "all it is worth," the Boston *Record*, for example, saying: "We shall either have to give up golf or the idea of a Pacific cable." The Boston *Herald* said: "The demand for golf balls has almost exhausted the supply [of Gutta-percha], and has not left enough of the article to afford material for laying the Pacific cable." Out in Chicago the journalists confused Gutta percha with India-rubber, but, fortunately, they had just learned that "Brazil could produce 50 per cent. more," and hence "the golf players thus may lose all the balls they wish and it will not affect the price of 'gum' shoes." But now for some facts:

Most of the golf balls used in America thus far have been imported. The import price is probably 16 cents apiece. The total imports of Gutta-percha goods of all kinds for the last fiscal year amounted to $254,332. Had all of this been golf balls—which it was not—it would have meant 1,589,575 balls. The total imports of crude Gutta-percha for the same year were 432,082 pounds, of which probably one third was waste, leaving 288,057 pounds available for manufacture. Had all of this gone into golf balls—which it did not—and allowing 10 balls to the pound, there could have been only 2,880,570 balls made. What, then, becomes of the estimate of 21,600,000 golf balls used annually in the United States? It is more probable that the domestic production, added to the imports, will not bring the total up to more than 2,000,000—not counting remade balls. Considering that last year's production of Gutta-percha exceeded 16,000,000 pounds, and that England alone imported nearly $5,000,000 worth of the raw material, it will be seen that the golf ball business cuts a small figure.

WHAT GOLF OWES TO GUTTA-PERCHA.

JOHN D. DUNN, in writing of golf as the ideal recreation, says: "It may be asked, why is it that the game has waited so long to acquire popularity? Why have its advantages not been recognized sooner? The answer that very simply and fully explains this really pertinent question is that it has been *too expensive*. Up to a few years ago golf balls were made of leather and feathers. Enough feathers to fill a hat were crammed into a leather covering about the size of the present ball. An expert workman could make only *three* balls a day, so that a ball in those days used to cost about five times as much as they do nowadays. Then again they were very easily damaged. One shot on the top of the ball with an iron club settled it altogether, so that if a player got into a few bunkers, had some bad lies, or was out of form, his game would cost him a lot of money. It was well called a royal sport in those days, as it required a royal purse to pay the bills of an enthusiastic player. Since the introduction of Gutta-percha balls there has been a vast cheapening of the game, and a corresponding steady increase in its popularity."

MY FAVORITE BALL.

THE Blazenger, the Pewtertown,
Atrippa, Would-be Flyer,
The Oysterburgh of some renown—
Of all I've been a buyer.
The Cockley and Obobo too,
The Marsity and Skewflite
Have seen me, each in turn, go through
Full many an old and new fight.
With B-2 White I've tried my hand
And many an N. G. lost,
While Coopinson and also Grand
Have added to the cost.
All these and many more I've tried,
But none so good as my ball
On the club house porch, as I sit beside
A fizzling, cold, Scotch high-ball.

WALTER N. P. DARROW.

—*Golf.*

THE INDIA-RUBBER INDUSTRY IN FRANCE.

By a Special Contributor in Paris.

DURING the past ten years there have been plainly evident some important modifications in factory practice throughout the French caoutchouc industry. This pronounced tendency was emphasized in the "Reports of the Jury of the Paris Exposition of 1889," but the observations made therein are more strongly confirmed by the great developments which have caused these modifications.

The manufacture of rubber goods in France is at present very different from what it used to be. The older methods of business tended to limit the production of each factory to one class of goods, in order that they might secure the benefits arising from manufacturing a specialty. Some houses manufactured nothing but footwear, while others were engaged exclusively in making mechanical rubber goods; a third class excelled in surgical appliances, and a fourth in waterproof fabrics and wearing apparel; others again in rubber balls, tobacco pouches, and the like. When, in order to fill growing requirements, new houses were established, each of them followed the custom of manufacturing a specialty.

In the course of time the increase of the means of production and the consequent competition resulted in a modification of this state of affairs. Instead of every one working in his own particular line, the French rubber manufacturers, almost without exception, extended the list of their products, and by so doing encroached upon each other's fields, until the whole industry has become generalized. From this state of affairs there has resulted a much sharper competition, since the manufacturers, threatened with the loss of their acquired standing in the market, each through their trade in a specialty, were anxious to defend their positions with a renewed energy that became highly profitable to their customers; but the results were far from being favorable to the manufacturers.

When the situation commenced to grow more and more strained, every one sought for a solution of the difficulty, and their efforts were aimed at these two principal points: the character of the rubber compounds and the facilities used in manufacturing.

In the first place, the rubber compounds were modified to a considerable extent. The most expensive element, the caoutchouc, was compounded with a view to the greatest possible economy, and, finally, they went so far as to introduce this precious commodity into the mixtures only in proportions absolutely indispensable. Then the caoutchouc, as far as possible, was replaced by "Factice" (rubber substitutes or artificial rubber). One firm in France, by the way, has acquired almost a monopoly of this commodity through the uniform and superior quality of their product.

Soon the manufacturers' efforts to attain economy were directed toward the utilization of waste products. Properly speaking, there has been no innovation in this respect, as waste products have long been used, except those from rubber garments and footwear, which had never found buyers at any price until about ten years ago. All kinds of waste have been in demand since that time; its price has constantly increased, especially after 1898, which marks the period of the general rising market for India-rubber. So many manufacturers have turned their attention to the product known in America and England as "reclaimed rubber" that its use is now becoming general in France.

The many modifications made in compounding different varieties of caoutchouc have brought out difficulties of a mechanical nature, involving the necessity for more powerful machinery to allow of incorporating such heterogeneous substances as factices, reclaimed rubber, waste, and others into a compound which, after the rolling process, must produce a practically homogeneous product. The heavier character of this new machinery has led to corresponding increase of motive power to drive it, and thus it has become necessary to replace the old steam engines by new ones which are now of the most improved types as well as more powerful. From this it naturally follows that, in proportion to the decrease in the quality of goods, there has been an increase in the amount of labor involved.

These, however, are not the only consequences of the diminition in quality. The fabrication of rubber products has become more difficult on account of the compounds used being poorer in caoutchouc, and thus less adhesive. This lack of adhesiveness has become the most difficult problem for rubber workers to solve, and many of them regret the abandonment of old methods. It has also become necessary to make the molds cheaper, either by simplifying them, which is often prejudicial to the quality of rubber products, or by substituting mechanical devices for manual labor.

This, then, is the general state of affairs in France regarding the India-rubber trade: on one side an ungovernable competition and on the other an increase in the number of raw materials used and in labor. The competition has been of such a nature that the prices of manufactured articles have not been raised in a justifiable proportion. The average increase in price which has been made of late, estimated at 7 per cent., must be considered insufficient to compensate for the increase in the price of raw materials.

It is difficult to understand why the rubber manufacturers of France did not take better advantage of the chances offered by an important market open for them in the bicycle and automobile trade. The general development of the bicycle trade has caused, however, a revival in the activity of the rubber manufacturers, some of them making tires exclusively for bicycles and automobiles. They also have tried to introduce these same tires for carriage wheels, and, although this new field has been invaded only in a conservative way, it has been sufficient to develop a trade which is much appreciated.

The growing demand for goods in other branches of the rubber trade has given the industry as a whole an impulse which has been sufficient to provide steady work for all. Although a noticeable activity exists in general, the returns in one way are far from being satisfactory. The year 1899 showed very insignificant profits, or almost none at all in fact, and this deplorable result must be ascribed to the causes mentioned above.

The possibility of concluding a combination in the rubber industry, with a view to saving the trade from the results of disastrous competition, has been discussed in France, but although the writer of this article has tried to promote a syndicate of manufacturers, the idea has not been carried to final accomplishment. It must be recognized that the intention is somewhat difficult to realize, on account of rivalry causing the manufacturers to have doubts of a satisfactory issue of combining their interests, instead of remaining, as in the past, each in charge of his individual factory.

The object aimed at in the formation of a trust was to give a better moral tone to the trade. Thus, instead of diminishing the quality of products (which is the consequence of unbridled competition), they could be improved and by this means maintain the good will of buyers. It is to be considered also that the requirements of buyers are quite often unreasonable. If they become dissatisfied they might expose the manufacturers to a disagreeable lock out. Moreover, the lack of concerted efforts would lead to poor results, and such a condition is noticeable in all countries where production exceeds the needs of consumption. By a competitive system carried to extremes the most distinguished talents may be utilized to subvert progress, for among scientific discoveries and inventions there are the injurious as well as the useful ones, and it is among the first that we classify factices, reclaimed rubber, and so on, which cannot be reasonably considered as proper substitutes for caoutchouc.

The first to generalize the use of caoutchouc was Mr. Charles Goodyear, who, by his discovery of vulcanization, gave to humanity a useful product free from all adulteration. We regret that his successors all over the globe are trying to find substitutes that bear but a distant analogy to genuine caoutchouc. However, the demand for rubber has become so universal that people are trying to produce it even from minerals, as well as seeking other new sources of supply. With the object in view of opening new fields of supply for crude rubber, some manufacturers have tried to establish business branches in the French colonies, and have also founded purchasing agencies in Africa and on the island of Madagascar. As these attempts have been of recent date only, it is impossible as yet to state results. Another fact to be noted is that our manufacturers desire to be independent of the middlemen in London, Liverpool, Hamburg, and Antwerp, and hence welcome the direct import into France of crude rubber.

It is still left to mention the state of the commercial growth of the rubber trade in France. The figures given below are taken from the official statistics of the French customs. The present system governing custom house transactions has been in operation since 1892, and the estimates given represent the average trade of the last seven years for the more important articles:

	Imports.	Exports.
Raw Caoutchouc and Gutta-percha...	4,335,990 kilos	1,859,705 kilos
English sheeting and thread	278,893 "	..... "
Elastic fabrics.....	47,978 "	313,654 "
Fabrics in pieces.....	9,318 "	24,139 "
Garments	12,575 "	28,804 "
Footwear.....	192,315 "	134,577 "
Fabrics for cards.....	43,910 "	2,973 "
Technical, etc	367,497 "	354,747 "

These figures show that the average consumption of raw caoutchouc in France amounts to about 2500 metrical tons; during the last fiscal year it was exactly 2851 tons, representing a value of $5,100,000. The total production of the French plants is estimated at $22,000 000. There are about 100 factories in France, and the hands employed in them, men and women, represent a population of 10,000.

No one could have foreseen at the commencement of the nineteenth century, when India-rubber was limited in its use to erasing pencil marks from paper, that it would some day become of such a great necessity, or be found under so many of the present forms and applied to so many uses as exist to-day. If Goodyear, from his grave, could only see the charitable influences of his discovery! Thanks to him a new industry has been created, giving bread to millions of his fellow creatures. Monsieur E. Chapel, the author of an important work on Caoutchouc and Gutta-percha, and secretary of the Chambre Syndicale Française du Caoutchouc, has drawn a parallel between Bernard de Palissy and Goodyear, and, mentioning that the first named has a monument in France, he asks the United States of America to erect one in honor of the second. May this initiative, coming from a Frenchman, who is an enthusiastic admirer of the American nation, find an echo among the rubber manufacturers of the United States.

The writer wishes to add that the rubber manufacturers of France, or at least many of them, have followed with the greatest interest the upward progress of THE INDIA RUBBER WORLD during the past ten years. On account of the important information it is giving, this periodical has been welcome as a valuable source of instruction, to which is attached here the highest importance. Is the general progress to be attributed to a stimulus given by THE INDIA RUBBER WORLD, or is it to be ascribed to a natural tendency of affairs? This I can not answer, but from the facts before me there appears a connection which, up to a certain point, may be interpreted in favor of the American journal. LE PACHE.

CATALOGUE OF RUBBER PLANTS.

AN eminent French horticulturist, A. Godefroy-Lebeuf, sends us from Paris a catalogue of economic and ornamental plants fitted for tropical cultivation, facilities for supplying which, direct from the various countries of their origin, he has perfected in recent years on account of the growing interest in developing the resources of the French colonies. It is a neat brochure of 88 pages, illustrated, and published at 1 franc. The list embraces the sugar cane, cotton, ginseng, bananas, *Strychnos nux-vomica* (which yields strychnine), pistache, palms, roses, orchids, etc., but special prominence is given to Caoutchouc yielding species, including several plants not generally referred to in this connection. The list follows:

Landolphia Kirkii—Zanzibar rubber.
Landolphia Owariensis—Casamance rubber.
Landolphia Klainei—Fernand-Vas (French Congo) rubber.
Landolphia sp—Dubreka (West Africa) rubber.
Landolphia tomentosa—Conakry (West Africa) rubber.
Urceola esculenta—Burma rubber.
Urceola elastica—Borneo rubber.
Manihot glaziovii—Ceará rubber.
Euphorbia sp.—Fort Dauphin (Madagascar) rubber.
Vahea Madagascarensis—Diego-Suarez (Madagascar) rubber.
Tabernæmontana sp.—West African tree, with fruit yielding rubber.
Kickxia Africana—Lagos rubber.
Kickxia latifolia—Kassai (Congo) rubber.
Ficus elastica—Assam rubber.
Ficus Vogelii—Conakry (West Africa) rubber.
Ficus rubiginosa—Australian rubber.
Castilloa elastica—Central American rubber.
Hevea Brasiliensis—Pará rubber.
Hevea confusa—Brazilian rubber.
Hancornia speciosa—Pernambuco, or "Mangabeira," rubber.
Sapium biglandulosum—Tolima (Colombia) rubber.
Sapium Thomsonii—Another Colombian species.
Willoughbeia firma—Malaysian rubber.
Willoughbeia edulis—Laos (China) rubber.
Chonemorpha macrophylla—An ornamental plant from India.
Isonandra gutta—Gutta-percha.
Payena Leerii—Gutta-sundek.
Mimusops balata—Balata.
Achras sapota—Chicle.

The catalogue contains considerable detail in regard to the characteristics of the various plants named.

"IN the mass of nine-tenths of the belladonna plasters India-rubber is used," writes Robert Wood Johnson, in *Red Cross Notes*. "I believe I was the first to combine India-rubber with the Pharmacopeial masses, and that this was the great progressive step of modern plaster making."

LARGER IMPORTS OF RUBBER GOODS.

IT may be of interest to some of the trade to have for reference and comparison a table of values of imports into the United States of manufactures of India-rubber and Gutta-percha during the last third of a century. The figures below, compiled from treasury department reports, show that since 1879, when the imports of rubber goods declined to $158,308, there has been an increase of nearly fourfold, and the increase in Gutta-percha goods has been even more marked:

YEARS.	Gutta-percha.	India-rubber.	Total.
1867-68	$ 3,118.31	$456,857.58	$459,975 89
1868 69	7,636 33	527,056 77	534,693.10
1869 70	8,187.00	494,519.40	502,706 40
1870 71	11 642.00	628,095.40	639,737.40
1871-72	26,463 00	617,812.74	644,275.74
1872 73	17,705.35	650,395.83	668,101 18
1873 74	15,020.52	650,699 50	665,720.02
1874-75	6,500 55	482,866 68	489,367 23
1875 76	5,201.00	385,318.21	390,519.21
1876-77	4,052.00	272,048.22	276,100 22
1877-78	6,056.00	207,426.79	213,482.79
1878-79	12,506.00	158.308.28	170,814.28
1879-80	12,204.00	335,395.05	347,599.05
1880-81	19,884.00	398,159.35	418,043 35
1881-82	23,812 00	300,445.65	324,257.65
1882 83	18,750 00	283,956 79	302,706.79
1883 84	80,363 95	230,595.94	310,959.89
1884-85	28,555 59	189,696.74	218,452.33
1885 86	43,513.00	186,036.88	229,549 88
1886 87	42,112.25	220,683 30	262,795 55
1887 88	67,223.50	225,991.39	293,214.89
1888 89	101,102.80	233,808 32	334,911.12
1889 90	113,131.40	250,917 38	364 048 78
1890-91	79,885.90	316,503.78	396,389 68
1891-92	60,941.36	371.624 83	432,566.19
1892-93	81,173 00	338.435.00	419,608.00
1893 94	30,654.00	309,308 co	339,962.00
1894-95	71,199.00	315,902.00	387,101.00
1895 96	85,231.00	294.288.00	379,519 00
1896 97	97,194 00	297.953.00	395.047 00
1897-98	156,997.00	309,247.00	466,244.00
1898-99	115,582.00	379.309.00	494 891.00
'99-1900	254.332.00	563,743.00	818,075 00
Total	$1,707,529.81	$11,863,537.80	$13,571,067.61
Average	51,743.33	359,195 08	411,244.47

Doubtless the additional imports of Gutta-percha goods may be explained by the growing demand for golf balls. The additional imports of India-rubber goods are probably scattered through a great variety of lines, among which druggists' sundries perhaps would be found prominent.

ADIRONDACKITE.

WE have a letter from C. E. Walters, a pharmacist of Prospect, Oneida county, N. Y., who writes that he has been experimenting in the direction of producing a new rubber substitute, with what he regards very good success. He has given to the new product the name of Adirondackite. He writes that it will not take the place of India-rubber in all places, but he believes that it will in many instances, while in others it may be used in connection with rubber. He says that he has developed a very good imitatfon of hard rubber, which, with some modification, may also be made into a good insulating material for electric wires. Mr. Walters has favored THE INDIA RUBBER WORLD with samples of "Adirondackite" as used in proofing cloth, and also in insulation work. He has not offered any of this material for sale, but is negotiating for the sale of his formulas.

INDIA-RUBBER GOODS IN SCOTLAND.

BY THE AMERICAN CONSUL AT EDINBURGH.

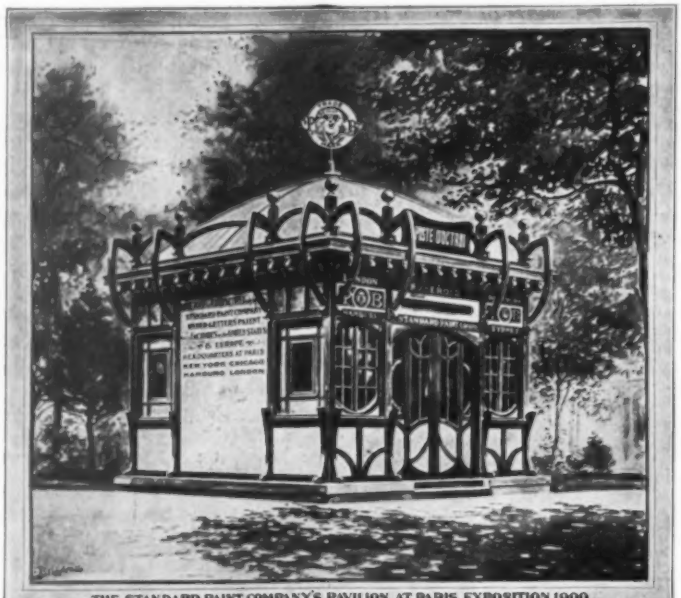
ON account of the prevalence of wet weather during seven or eight months of the year, there is a remarkable demand for waterproof goods. What, probably, makes this demand more widespread here than anywhere else in Europe is the fact that the Scottish people are specially fond of outdoor sports and outdoor life. Rain does not keep them at home. They have cultivated a fine disregard for meteorogical conditions, and will golf, cycle, shoot, or fish on a wet day in philosophical serenity, if their rubber boots or coats do not spring a leak. The ladies are fully as indifferent to mist or rain as are the men. The never failing market for mackintoshes and every class of rubber goods long ago led to the establishment of India-rubber manufactories. There are three or four large and flourishing companies engaged in this industry in Edinburgh. Two of these companies have each a trade that extends to the British colonies, to Russia, and to other countries. One of the companies, I may add, has been a heavy buyer of American cotton goods for use in the industry. Despite the formidable competition, American rubber goods are imported in moderate quantities. They consist chiefly of the light glove fitting rubbers. The rubber footwear of local manufacture is considered by many to be unnecessarily thick. The same objection applies to most of the waterproof garments worn. The sole purpose of wearing rubber garments or shoes is, or ought to be, to keep the clothing or boots or shoes dry, for the cold is never extreme in winter, and the heat is sometimes excessive in summer. From residents of this city I have often heard criticisms of the rubbers and mackintoshes made here. That there is an opportunity for American manufacturers to build up a trade I do not venture to assert, but merely describe the market and the existing conditions.

Golf Balls.—The exportation of golf clubs to the United States from this district has practically ceased. Now and then there is a small invoice of clubs, but the item of "golf goods" in the quarterly list of declared exports has, for the past twelve months at least, consisted almost wholly of balls. Some of the manufacturers of and dealers in golf goods have expressed surprise that this branch of the trade keeps up, for the only "secret" in the making of a good golf ball is the patience to wait till it matures before putting it on the market. Since 1896, many ball makers have gone from Scotland to the United States, and the art of manipulating Gutta-percha in the best possible way for the purpose of producing a perfect ball must be pretty well known. The element in favor of the British golf ball maker is the cheaper labor on this side. and another factor, probably, is a fancy among thousands of American golfers that the British made ball is better than the American, because the industry is an old one in this country. The prices of standard balls in this market in lots of 200 dozen range from $1.70 to $2 per dozen, with 2½ per cent. discount. The recent advance in the value of Gutta-percha from $1.45 to $1.57 per pound has not affected the prices of golf balls. The competition in the trade is very keen, and the profits small. For the first six months of 1899, the number of golf balls invoiced at this consulate [for the United States] was 7146 dozen, at a total net value of $12,762.—*Commercial Relations of the United States for 1899.*

THE Association des Industrielles, of France (3, rue de Lutsce, Paris), has offered a prize of 1000 francs for the best insulating gloves for the use of electrical linemen. The offer is open to the world.

A HANDSOME EXHIBIT AT PARIS.

ONE of the most attractive exhibits from the United States —or from any other country—at the Paris Exposition of 1900 is that of the Standard Paint Co. (New York), the manufacturers of "Ruberoid." By special concession, after the French architects had themselves made successful use of P & B "Ruberoid" in the hallways and on the stairways of the chief operating building of the exposition commissioners, at 2, Avenue Rapp, for more than a year before the exposition opened, it was arranged that an ornamental pavilion, to be constructed inside and out, flooring, sides, ceiling, and roof, of ruberoid, should be erected for the use of the French authorities in the colonial section. Thus, a building purely American in material is being actually used during the term of the exposition by the French government. It is classified in the section of architecture. The ruberoid covering the exterior walls is decorated in imitation of gray birch with pilasters in oak. The roof is ruberoid undecorated. The interior walls, above the base of imitation wood, are tastefully painted in floral designs on a delicate background as in fresco. The ceiling is panelled and the ruberoid elaborately decorated in allegorical design, emblematic of the American, European, Asiatic, and African continents. The flooring bears a tastefully colored border in Grecian design. Though ruberoid was in service as a decorated flooring at the recent Brussels, Sydney, and other expositions, the Paris decorations are of a more artistic grade than has heretofore been attempted. In the American section (machinery and electricity department), the P & B electrical compounds, insulating varnish, and tape are shown; in the civil engineering and transportation department are the well known P & B insulating papers, roofing, and other products of the Standard Paint Co.



THE STANDARD PAINT COMPANY'S PAVILION AT PARIS EXPOSITION,1900
CONSTRUCTION EXTERIOR AND INTERIOR DECORATED RUBEROID

CAOUTCHOUC MONOPOLY IN PORTUGAL.

THE Compagnie du Caoutchouc, Monopole du Portugal, organized in Belgium, March 5, 1898, to exercise the exclusive privilege for the manufacture of rubber goods in the kingdom of Portugal for a term of ten years, has a capital fixed at 1,000,000 francs. A recent number of *La Gazette Coloniale* Brussels) contains this information:

"We extract the following lines from a letter by M. Bourlet, director of La Lulonga company, just stopping at Lisbon:

"I visited the rubber factory at Lisbon and I am quite charmed with it. It is really well established, and there cannot be any doubt as to its prosperity. Orders are rushing in. The department for bicycle and carriage tires is doing very well; there have been even orders refused. The same is true of the hose department. In my opinion, this establishment will have a future, especially so, if the management is confided to a very intelligent, industrious man, with much initiative, and if the staff of employés is reduced to the right limit."

THE LATE MR. HUNTINGTON AND RUBBER.

FOR some reason which has never been quite clear, Collis P. Huntington, the railroad magnate, who died at his summer home near New York, in August, was mentioned in the newspapers for nearly ten years as being interested in India-rubber in Africa, and at one time he was credited with being a stockholder in the then newly projected Congo railway. Ten years ago he wrote the following letter:

TO THE EDITOR OF THE INDIA RUBBER WORLD: In reply to yours of the 26th instant, I would say that I cannot at this time give you any definite information in respect to the construction of the proposed railroad in equatorial Africa. My connection with the enterprise is largely philanthropic, and I have never intended to take up the details of railroad construction, or the development of the resources of that section of the continent of Africa. Yours truly,

C. P. HUNTINGTON.

New York, July 31, 1890.

Later [see THE INDIA RUBBER WORLD, March 10, 1895] Mr. Huntington was asked to give this paper some account of his interest in the rubber trade, as reported in the daily press. "I have none," he said. "I know nothing of the interview with me in the *Herald*. I never could have said anything of the kind. I know so little about rubber in Africa that I would no sooner advise anyone to invest money in the industry than I would advise him to make investments in the moon."

As for the Congo railroad, so able a manager as Mr. Huntington might have found it to afford a profitable channel for investment. The report for the fiscal year 1899-00 shows the income to have been 13,171,349 francs (=$2,540,070), with the operating expenses a good deal less. The receipts for the preceding year were 10,108,541 francs, and at that figure the road yielded a profit.

RUBBER HEELS SAVE LIFE.—During a recent thunderstorm at Mt. Vernon, N. Y., a policeman, Patrick Gilroy, was thrown to the ground, and, when he attempted to rise, found that he had lost the use of his left leg. Dr. Meyers, the police surgeon, was sent for, and said that the shock had burst an artery in Gilroy's leg. Dr. Meyers said that if it had not been for his rubber heels, which acted as non-conductors, Gilroy would probably have been killed instantly.

NEW TRADE PUBLICATIONS.

THE largest and most complete catalogue of rubber goods that has been seen by THE INDIA RUBBER WORLD is the "Catalogo Generale" of PIRELLI & CO., whose important works at Milan, Italy, were described recently in this journal. It is neatly and substantially bound in cloth, 8×10½ inches, and containing 682 pages. This has not, indeed, been gotten up as a single publication, but embraces several catalogues, each devoted to a single class of goods, and bearing a different date, the latest appearing in April, 1900. In its present shape the volume embraces references to almost every article that is made of rubber, most of them being illustrated. As our readers know, the Pirelli factory is devoted to the production of almost everything in rubber except boots and shoes, and the catalogue does embrace a wide variety of rubber soles and heels. First come lists of all kinds of mechanical (or "technical") and molded rubber goods, priced in *lire*, with dimensions or weights according to the metrical system, of course. There are sections devoted to belting, valves in great variety, rubber hat forms (with 168 illustrations), tires for cycles and motor vehicles, insulated wire and electrical material, elastic tissues, waterproof fabrics, mackintoshes and other waterproof garments for men and women, tubing for artificial flowers, solutions and cements, goods of Gutta-percha, hard rubber, asbestos, etc. The catalogue of rubber toys doubtless contains novelties for anybody but an Italian. There are soldiers and officers of all nations, on horseback and afoot, appropriately colored; clowns, musicians, schoolboys, bull-fighters, animals and birds in great variety, and even religious subjects —the Madonna, St. Joseph, etc. There are toy potatoes, of several sizes, grey or colored in imitation of nature, at so much per dozen. Then come 79 pages of plates of medical and surgical and stationers' goods, notions, and the like, embracing an extensive line and many handsome goods. There are tobacco pouches labelled "London" and "Paris," evidently made for sale in those markets. A special list of mats and matting includes some handsome designs. Another is devoted to rubber erasers, many designs of which are rather more elaborate than is usual in these goods elsewhere. Some of these erasers show in relief portraits of Pope Leo XIII, the late King Humbert, Garibaldi, cathedral of Milan, allegorical figures, and so on. Other special lists relate to soles and heels and horseshoe pads, while a number of plates illustrate hard rubber products.

F. W. WHITCHER & CO. (Boston) send us a "Catalogue of Rubber Specialties" devoted to rubber heels and soles, and the cements used in connection with such goods. This is a comparatively new branch of the rubber trade, but one that seems to grow in importance, since we have now not only catalogues devoted wholly to the new specialties, but also ccmpanies organized for their manufacture alone. [5″×6″. 12 pages.]

THE GRANBY RUBBER CO. (Granby, Que.) issue an illustrated catalogue and price list of their rubber boots and shoes, for sale by The Ames, Holden Co., Limited (Montreal), for 1900–01, which is both the largest and the most complete publication yet made by the company. [3¾″×6″. 76 pages.]

THE MAPLE LEAF RUBBER CO., LIMITED (Toronto, Canada), formerly the Toronto Rubber Shoe Manufacturing Co., Limited, have issued their first Price List under the new régime, for the season 1900–01, covering their "Maple Leaf" and "Toronto" brands, the latter being their second grade goods. [2⅝″×6⅜″. 12 pages.]

THE BERLIN RUBBER MANUFACTURING CO., LIMITED (Berlin, Ont.), have issued their first annual illustrated catalogue of "Our Daisy" (first quality) and "America" (second quality) brands of rubber footwear. The company have been making these brands for some time past, but without issuing an illustrated catalogue, and they are to be congratulated upon the completeness and handsome appearance of their first publication. [3⅝″×6″. 80 pages.]

WILLIAM F. MAYO & CO. (Boston), who have contracted for the entire output of factory damaged and out of style rubber footwear of several leading brands, issue a new illustrated catalogue—No. 3, July, 1900—which is interesting as indicating the more systematic character of the trade in goods of this class than existed formerly, besides the interest which it possesses for dealers who want to buy such goods. [5¾″×9″. 28 pages.]

B. F. STURTEVANT CO. (Boston), in connection with their business in supplying heating or drying and ventilating systems to buildings of all kinds, including factories, have from time to time collected much valuable data bearing upon these subjects which are of general application, and which have been compiled in volumes and pamphlets which are calculated to be of influence and usefulness to manufacturers of every class. The company have favored us lately with one of these publications —"Illustrated Catalogue of the Sturtevant Steel Plate Steam, Pulley and Electric Fans [6¼″×9″. 132 pages.]" In connection with this has been received also a treatise on "Ventilation and Heating Principles and Application [Cloth. 9⅛″×9¼″. 169 pages.]"

ALSO RECEIVED.

NEW ENGLAND BUTT CO., Providence, Rhode Island = Illustrated Catalogue. Braiding Machinery [including circular looms and other machines adapted to rubber factories.] 26 pp.

The Ferguson Rubber Heel Co., Columbus, Ohio=The Ferguson Noiseless Rubber Heel. 8 p.

American Tubing and Webbing Co., Providence, R. I.=Price List of Flexible Tubing and Oil Stove Wicks. 8 p.

Brass Goods Manufacturing Co., Nos. 86–92 Third street, Brooklyn, N. Y.=[Catalogue of] Brass and Bronze Hardware. 148 p. *Also:* Price List, January 1, 1900. 13 p.

The Warner Manufacturing Co., Dayton, Ohio=How to Handle the Warner Detachable Tire. 18 p.

Joseph Dixon Crucible Co., Jersey City, New Jersey. = Graphite Facings [for surfacing molds to prevent adhesion of metal to the sand.] 8 pp. *Also:* Dixon's Silicia Graphite Paint. 8 pp.

John S. Metcalf Co., Chicago, Illinois. =A Story of the Grain Elevator [describing some large ones erected by this firm.] 64 pp.

Woven Steel Hose and Cable Co., Trenton, New Jersey. = "Protector" Hose. 8 pp.

Model Rubber Co., Woonsocket, Rhode Island.=Price List [of Boots and Shoes], 1900-01. 8 pp.

National Electric Hose Signal Co., Boston, Massachusetts.=Electricity applied to Fire Hose for Purposes of Signalling. 20 pp.

The Philip Carey Manufacturing Co., Cincinnati, Ohio.=Carey's Flexible Cement Roofing. 40 pp. *Also:* Carey's Magnesia Coverings. 16 pp.

Robins Conveying Belt Co., New York.=Description of Belt Conveying Machinery [shown at the Paris Exposition]. 16 pp.

J. M. Camp, Des Moines, Iowa.=J. M. Camp's Rubber Horseshoe. 12 pp.

The Bridgeport Gun Implement Co., Nos. 313-315 Broadway, New York.=Retail Catalogue, Seasons 1900-01. Golf Goods, Balls, Caddie Bags, Course Supplies. Revised Elementary Instruction to Beginners. By John D. Dunn. The Rules of Golf. 104 pp.

Rush Tire Co., Williamsport, Pennsylvania.=The Rush Detachable Tire. 6 pp.

Pirelli & Co., Milan, Italy. [Pamphlet describing their works and products, published for the Paris Exposition.] 10 pp.

RECENT RUBBER PATENTS.

UNITED STATES PATENT RECORD.

ISSUED AUGUST 7, 1900.

NO. 655,183. Pneumatic tire fastening. Joseph A. Berger, Chicago, assignor of one-half to John P. Larson, same place.

655,191. Means for securing rubber tires to vehicle wheels. Richard A. Brine, Revere, Mass.

655,222. Tool for repairing rubber fabrics. Cyrus F. Gifford, Erie, Pa.

655,286. Vehicle tire. James E. Van Nest, Martinsville, N. J.

655,507. Hose. John F. McGuire, Akron, Ohio, assignor to the B. F. Goodrich Co.

655,628. Soft tread horseshoe. William M. Kennedy and Robert C. Duncan, Franklin, Pa.

ISSUED AUGUST 14, 1900.

655,709. Method of attaching tire to rim. Frank M., John S., and William W. Hilton, and Robert M. Merriman, Akron, Ohio.

655,744. Syringe. Washington S. Valentine, New York.

655,827. Cushioned horseshoe. Thomas J. Lovett, Chicago, assignor to the Budd Doble Tire Co., New York.

655,828. Soft tread attachment for horseshoes. *Same.*

655,829. Cushioned horseshoe. *Same.*

655,932. Pumping attachment for pneumatic tires. Henry Laviers, Wellston, Ohio, assignor of one-half to E. E. Donaldson, same place.

655,940. Billiard cue tip. Jerome Prince, Milford, Mass., assignor to Sarah J. Bucklin, Andover, Mass.

656,026. Horseshoe pad. Jacob Kronenberg, New York.

656,045. Tire and rim for vehicle wheels. William F. Rae, London, England.

656,054. Valve protector and fastener for pneumatic tires. William E. Smith, Johnstown, Pa.

656,060. Means for securing resilient tires to wheels. Frederick J. Trench, Dublin, Ireland.

656,083. Puncture proof pneumatic tire. Joseph A. Berger, Chicago.

656,144. Soft-tread horseshoe. Harvery D. Palmer, Chicago.

ISSUED AUGUST 21, 1900.

656,172. Vehicle tire fastener. James R. Colt, Batavia, N. Y.

656,191. Compound as substitute for Caoutchouc, Gutta-percha, or the like. Eugen Hornung and Rudolf Liebl, Vienna, Austria.

656,442. Rubber type. Joseph S. Duncan, Chicago, assignor to the Addressograph Co., same place.

656,605. Apparatus for placing inner tubes of pneumatic tires on mandrels. Stephen S. Miller, Akron, Ohio.

ISSUED AUGUST 28, 1900.

656,657. India-rubber water bag. John Parette, Montreal, Canada.

656,865. Elastic tire for wheels. Alfred Tobler and Henri Samuel, Paris, France.

656,869. Artificial leather. William Walden, New York.

657,007. Valve for pneumatic tires of bicycles. Frank Richter, Cologne, Germany.

DESIGN PATENT.

33,143. Bicycle pedal rubber. Frank A. Wilcox, Erie, Pa. August 28.

ENGLISH PATENT RECORD.

APPLICATIONS.—1900.

12,868. Anthony Pulbrook and Emily Henrietta Pulbrook, 115, Cannon street, London. Improvements in inflatable tires for cycles and vehicles. July 17.

12,966. John Ebenezer Hopkinson, 50, Queen Victoria street, London. Improvements in the construction of rubber tires and rims therefor. July 18.

12,978. Isidor Frankenberg and Carl Otto Weber, Manchester. Improvements in the ornamentation of India-rubber waterproof fabrics. July 18.

13,419. Joseph Esch, 322, High Holborn, London. Improved elastic support for the legs of articles of furniture. July 25.

13,463. Louis Ferdinand Tavernier, Birkbeck Bank Chambers, Chancery lane, London. Improvements in pneumatic tires. [Victor Edouard Belledin, France.] July 26.

13,696. William Herbert Barrett and William Arthur Young, 18, Fulham place, Paddington, London. Improvements in pneumatic tires for cycles and vehicles. July 31.

13,726. George James Keller, 77, Chancery lane, London. Improvements in vehicle tires. July 31.

13,766. John Sharpe Wilbraham Edmunds, 111, Hatton garden, London. Improvements in pneumatic tires. July 31.

13,776. Frank Fayers Kerr, 5, Clayton square, Liverpool. Improvements in pneumatic tires. August 1.

13,828. Charles Richard Adams and Thomas Sanders, 22, Southampton buildings, Chancery lane, London. Improvements in means for attaching elastic tires to wheels. August 1.

13,836. George Womack Hopper, 62, St. Vincent street, Glasgow. Improvements in wheel rims and tires. August 2.

13,846. Ralph Walker Stuart, trading as the Scottish Central Rubber Co., and Louis Collins, 62, St. Vincent street, Glasgow. Improvements in fishing stockings, waders, diving dresses, and like waterproof garments. August 2.

13,886. Joseph Wilfred Bowley, Coun House, Surrey street, Strand, London. Improved means applicable for use in printing with the aid of rubber type or dies. August 2.

13,948. Edwin Lewis Curbishley, 11, Burlington chambers, Birmingham. Improvements in pneumatic tires for cycle and like wheels. August 3.

13,981. Charles Reeves and William Henry Terry, trading as the Kempton Cycle Co., 55, Chancery lane, London. Improvements in the manufacture of puncture-proof material for pneumatic tires. August 3.

13,982. Francis William Rosser, 33, Cannon street, London. Improvements in air tubes for pneumatic tires. August 3.

14,095. Ralph Walker Stewart, trading as the Scottish Central Rubber Company, Louis Collins, and Robert Robertson, 62, St. Vincent street, Glasgow. Improvements in waterproof garments August 7.

14,087. Henry Alfred Austin, 109, Drayton road, Portsmouth. The "Lightning" India-rubber solution. August 7.

14,131. Thomas Sloper, 111, Hatton garden, London. Improvements in pneumatic tires and to appliances used in their manufacture. August 7.

14,238. Marie Hollubek, 18, Buckingham street, Strand, London. Improvements in tires. August 8.

14,319. Arthur Vincent Jerome, 77, Colmore row, Birmingham. Improvements in pneumatic tires. August 10.

14,374. John Adair, Waterford, Ireland. Improvements relating to pneumatic tires. August 11.

14 432. Harold Fielding, The Lodge, Castleton, Sheffield. Improvements in pneumatic tires. August 13.

14,537. William Griffiths, 37, Cursitor street, Chancery lane, London. Improved manner of securing rubber tires. August 14.

14,642. John Henry Glew, 166, Fleet street, London. Improved appliances for securing rubber tires to wheels of road vehicles. August 15.

14,653. William McCallym and Gordon Henderson, 100, Wellington street, Glasgow. Improvement in pneumatic tires for cycles. August 16.

American Inventions.

12,951. George Croydon Marks, 18, Southampton buildings, Chancery lane, London. Improvements in pneumatic tired wheels. [Elton Wosson McCaslin, United States.] July 18.

13,268. William Phillips Thompson, 322, High Holborn, London. Improvements in vehicle tires. [William Eugene Burroughs, United States.] July 23.

14,543–14,545. Raymond Beach Price and The Calumet Tire Rubber Co., 45, Southampton buildings, Chancery lane, London. Improvements in rubber tires for vehicles. [These are Chicago parties]. August 14.

PATENTS GRANTED.—APPLICATIONS OF 1899.

7358. Protector for pneumatic tire. Thompson, W. P., 422, High Holborn, Middlesex [Legrand, J. P., Paris.] April 7.

7414. Spring tire. Harraway, E. L., Hornsea, near Hull, Yorkshire. April 8.

7573. Method of attaching pneumatic tire to rim. Krohn, G., 32, Bethesdastrasse, Hamburg-Borgfelde, Germany. April 11.

7748. Rubber spring tire. Ellis, W. T., 72, New City road, Glasgow. April 13.

7765. Method of attaching tire to rim. Cox, L., 3, Great Charles street, Birmingham. April 13.

7798. Pneumatic tire. Seehausen, T., Helsingborg, Sweden. April 13.

JOTTINGS BY THE TRAVELING EDITOR.

VARIOUS schemes either for rendering tires unpuncturable, or for making them so that a puncture does no harm, are continually brought forward. The idea of metal plates in the tread won many disciples, but to-day no such tires are used at one time. The compounding of the rubber in the tread with various materials, like emery, gives a much better result, but under certain conditions even with these tires will puncture. In this line perhaps it is well to remember that out of the great variety of repair tools, puncture fluids, and healing devices that were brought out in the best days of the tire business, very few have survived. Indeed, only those with the India-rubber or Gutta-percha base are now notably in evidence. A late invention that is being tested, and from which a good deal is hoped, is a material that is said to be very cheap, costing some three cents a pound, and almost as good a cushioning substance as compressed air. This is pumped into the tire, and, after it sets, will not leak out through an ordinary puncture. Just what its future may be is difficult to forecast. It is being tested by large tire users, however, and, if successful, will be put into general use.

* * *

ALMOST from its inception, the rubber shoe business has been one that has taken pride in the manufacture of its own varnishes. Indeed, there have been in the different mills such a variety of compounds, of heat, and of surface in the goods, that varnishes have had to be differently made for the different companies. Within the past year, however, the manufacturers of rubber boots and shoes have drawn closer together in both methods and processes, and a notable proof of this is shown in the fact that large manufacturers of varnish are beginning to bid for the trade, not only of the boot and shoe men, but of all rubber-surfaced goods manufacturers who are varnish users. If this varnish can be bought of manufacturers who are especially equipped for this work, it will be a decided advantage all around. The varnish house in connection with any rubber mill has always been a source of trouble to the superintendent, and often the skilled varnish maker has been a tyrant who ruled with a rod of iron.

* * *

THE subject of drying crude rubber is one that has attracted a deal of attention, and progressive manufacturers of to-day are nearly all of the opinion that the quicker the moisture is taken from the gum, the better it is for the rubber as well as for their pocketbooks. Up to the present time no American manufacturers, so far as I know, have been drying rubber *in vacuo*. It is with a great deal of satisfaction, therefore, that it has become possible to mention that an expert in this line, Mr. Mende, who has built vacuum dryers in many lines, has, after a careful study of the situation and of the dryers used abroad, perfected one for use in rubber factories.

* * *

THE rubber dress shield has grown to be such a necessity the world over, that it is interesting to note that it is to have the same sort of rival that the mackintosh has in the cravenette garment. A recent process which an American manufacturer has perfected, is made to render either silk or cotton absolutely waterproof, and that without in any way injuring or altering the integrity of appearance of the fabric. Dress shields made of silk treated with this proofing have worked exceedingly well, and, the inventor claims, are superior to those of rubber lining, for the reason that they are porous enough to allow the air to pass through the fabric while repelling all moisture.

* * *

THE wonderful growth of small mold work in rubber factories during the past few years is shown by the great number of presses, large and small, that are constantly added to mechanical and other factories. In addition to the new presses constantly ordered, it is well to remember that many of the manufacturers who went into pneumatic tires when the business was at its height, and who later went out of that branch, are using their batteries of presses on work of this kind.

* * *

RUBBER experts in all kinds have appeared and disappeared during the last few years, but the latest and most interesting type is the expert on rubber culture. There are many of them, of course, whose knowledge is not practical, but there are others who have gone into the problem so thoroughly and energetically that they are sure of success. In chatting with one of these, who by the way, has a plantation that is profitable, the following interesting point was developed. He was speaking of the coagulation of sap from the *Castilloa elastica*, and quietly condemned the mechanical process, for the reason that his study of the question led him to believe that coagulation was wholly a chemical process. He proved this by citing his experiments on his own plantations. To begin with, the rubber sap was put in a vessel that had a stop cock at the bottom for drawing off the liquid; into the sap he placed the alkaline solution in common use on the American Isthmus. Soon after this liquid was added to the rubber sap, the globules of Caoutchouc, began to gather at the top and center of the liquid, and without mechanical agitation, by chemical attraction, kept gathering and forming into a spongy mass, which when alone freed from surplus moisture formed a high grade of the "Central" rubber. He acknowledged that mechanical devices such as centrifugal machines would coagulate rubber, but held that a great deal was lost in the mechanical process that would be saved by the chemical.

* * *

IT is related of Charles Naughton, who died lately at Passaic, N. J., that a good many years ago he lost an arm in a machine in a steam engine works in which John H. Cheever had an interest. Mr. Cheever is said to have paid all the expenses of his treatment and to have assured him of employment for the rest of his life at the same wages he had been earning. The plant later became a rubber factory, operated by the New York Belting and Packing Co., and "Charley" Naughton stood faithfully at the mill gate as a watchman for more than twenty-five years.

* * *

IT is not only in the large consumption of balls that the growth of the taste for golf is of interest to the India-rubber manufacturer. Already many little rubber novelties have crept into the list of golf supplies, such as rubber tees, rubber ball cleaners, rubber handle grips, and the like, to say nothing of the rubber soled golfing shoes of which so many are now called for.

THE Durham Rubber Co., Limited (Bowmanville, Ontario), are doing a good business in the sale of their "Durham" rubber heels.

INDIA-RUBBER GOODS IN COMMERCE.

AMERICAN RUBBER GOODS EXPORTS.

RETURNS have now come to hand of exports of rubber goods from the United States for seven months of the current year, as classified by the customs service, the values being as follows:

MONTHS.	Belting, Packing, and Hose.	Boots and Shoes.	All other Rubber.	TOTAL.
Jan.-June....	$262,761	$198,022	$751,171	$1,211,954
July.....	54,965	54,188	109,771	218,924
Total.....	$317,726	$252,210	$860,942	$1,430,878

The exports of rubber goods of all kinds for the corresponding seven months of 1899 reached a total value of only $1,099,787. The rate of increase is 30.1 per cent. The exports of rubber shoes during the seven months amounted to 421,749 pairs, against 229,623 pairs during the corresponding period of last year—an increase of 83.6 per cent.

OUR TRADE WITH JAPAN.

THE possibilities for business with Japan appeal in more ways than one to the rubber trade of the United States. During the first week in September the exports from New York embraced the following items:

India-rubber goods.....	$4419
India rubber, crude.....	2130
India rubber machinery.....	2570

Neither item is large, to be sure, but each points to the prospect of a larger trade. There were several other items, which may have included a certain amount of rubber—bicycle material, electrical material, dental goods, and the like.

WHERE AMERICAN RUBBER GOODS GO.

EXPORTS from New York, during the five weeks ended September 4, 1900, classed as "India-rubber goods," amounted in value and were consigned as follows, the figures being larger than for the corresponding period in any former year:

Great Britain..	$32,502	Mexico.....	$5,981	Peru.....	$ 427
Germany	35,077	Central Amer.	505	Uruguay.....	135
France.....	23,962	Br. Honduras.	39	Venezuela.....	691
Holland.....	564	Cuba.....	2,809	Australia	5,819
Belgium.....	8,421	Porto Rico....	995	New Zealand..	1,275
Denmark.....	1,524	British W. Ind.	410	China	70
Norway	795	San Domingo.	494	Hongkong....	23
Sweden.....	917	Haiti.....	227	Japan	6,126
Austria.....	82	Argentina	1,115	Philippines....	55
Italy.....	209	Brazil.....	595	British E. Ind.	95
Spain	5,662	Colombia.....	124	Dutch E. Ind.	19
Switzerland...	976	Chile.....	1,266	British Africa.	3,984
Turkey.....	1,211	Br. Guiana....	28		
Newfoundland.	84	Ecuador	248	Total ...$145,541	

During the nine weeks ended on the above date such exports from New York reached $255,932, against $156,358 for the same nine weeks last year. Other exports to be considered for the five weeks mentioned were:

Dress Shields.—To Hamburg, $3664; Antwerp, $1963; Liverpool, $2870; Southampton, $9370; London, $878; other ports, $146—total, $18,011.

India-rubber Thread.—To Hamburg, $1170; Rotterdam, $2228; Moscow, $7913—total, $11,311.

Electric Cables.—To Glasgow, $13,454; London, $4072; and smaller shipments classed as "Electrical material."

Clothes Wringers.—To all ports, $7,031.

India-rubber Cement.—To Hamburg, $1200.

India-rubber Scrap.—To Manchester, $600; London, $198; Liverpool, $9815; Glasgow, $1082; Havre, $4623; Hamburg, $3300; Genoa, $1500—total, $21,118.

Rubber Machinery.—To Japan, $2570.

Exports of India-rubber goods to the following islands during the twelve months ended June 30, 1900, were as stated:

ISLANDS.	Belting, Packing, and Hose.	Boots and Shoes.	All other Rubber.	TOTAL.
Cuba	$39,128	$3,793	$30 844	$73,765
Porto Rico....	2,729	198	4,165	7,092
Hawaii.	19,774	4,631	41,715	66,120
Philippines...	637	205	6,094	6,936
Total... ..	$62,268	$8,827	$82,818	$153,913

Hereafter the Hawaiian trade will not be recorded in the statistics of foreign commerce, on account of Hawaii now being regarded as a part of the United States.

GERMAN RUBBER IMPORTS AND EXPORTS.

THE figures below, for the first six months of 1900, from official sources, indicate values in marks. The sign + indicates increase over the same period of 1899 and in the sign — a falling off:

Imports.	CLASSIFICATION.	Exports.
12,000—	.....Hard Rubber in Mass.....	230,000+
107,000+	.....Hard Rubber Goods.....	15 733,000+
1,213,000—	.....Rubber Threads and Sheets... ..	1,553,000—
81,000—	.....Rubber Bicycle Goods.....	(a)
1,048,000+	.....Coarse Soft Rubber Goods.....	15,733,000+
2,855,000	... .. Rubber Shoes and Boots.....	871,000
113,000	.....Other Fine Soft Rubber Goods	804,000
28,000—	....Toys of Soft Rubber.....	(a)
1,764,000+	.....Fabrics Coated with Rubber.....	2,016,000—
36,000—	.....Elastic Fabrics and Hosiery	133,000—
187,000+	.....Hemp and Rubber Hose.. ...	787,000+
336,000+	.....Rubber Proofed Clothing..	811,000+
.....	.....Unclassified Rubber Goods.....	71,000+
7,780,000	.... .. .Total Value in Marks....	38,742,000
£389,000	.....Total, English Money.	£1,937,100
$1,945,000	.....Total, American Money.....	$9,685,500

(a) Included Under Other Headings.

[NOTE.—In computing values £1 is estimated at 20 marks and $1 at 4 marks.]

RUBBER BOOTS AND SHOES (WEIGHT IN POUNDS.)

	Imports.	Exports.		Imports.	Exports.
Russia.....792,660	....		Belgium	...	16,940
United States... 77,220	..		Switzerland. ...	...	8,800
Aust.-Hungary. 60,720	....		Other countries.	7,700	97,020
Great Britain... 13 420	166,320				
France.... ...	....	30,140	Total.....432,600		319,220

[Value of Imports, 2,855,000 marks; Exports, 871,000 marks.]

CANADIAN IMPORTS OF RUBBER GOODS.

IMPORTS of manufactures of India-rubber and Gutta-percha have increased as follows during the past five years:

Year ending June 30, 1896.....	$357,281
Year ending June 30, 1897.....	313,903
Year ending June 30, 1898	403,231
Year ending June 30, 1899.....	462,520
Year ending June 30, 1900.....	532,318

The amount of duties collected on such imports during the last fiscal year was $147,434.02. The above figures are believed to be larger than for any previous year.

THE PICKETT TWO PART VALVE.

THE Pickett Two Part Valve, described less fully in the last INDIA RUBBER WORLD, has recently attracted a great deal of attention among bicycle and tire manufacturers in the United States and elsewhere. To one familiar with tire construction, it is hardly necessary to say that the valve has always been the really weak point of the tire, and yet it is the vital part on which a great deal depends, and which determines its success or failure. The history of pneumatic tire construction during the last dozen years has shown a steady improvement, until the tire as now built is practically perfect, while on the other hand valves have not been correspondingly improved.

This new all rubber valve, by reason of its simplicity and cheapness, seems destined to take the first place among devices of its kind. It is artistic in the matter of design and practical in operation, and, having no metal parts, it does not attempt to combine with the tire elements that do not harmonize therewith. It does not pinch the fabric by the clamping of a metal base, or demand the use of stove-pipe wire to secure it in a rubber shoe. Moreover, there are no springs or mechanism to get out of order, no screw-threads, and no dust-cap to become lost. Patents have been taken out, fully covering this valve in all possible phases, at home and abroad.

By referring to the engravings it will be seen that the valve is composed of but two parts, each formed of rubber. In this connection, it may be stated that one vital point in the matter of tire design has been entirely overlooked in the past and this, carefully considered, ought to appeal to every intelligent mechanic engaged in the bicycle trade—namely, a pneumatic tire, if theoretically perfect, should, by its very nature, possess complete flexibility in all its parts. Thus, if the air valve is a part of the tire—and its purpose seems to indicate as much—it also as an integral member of the tire should embody the same qualities, be formed of the same material, and yield in sympathy with every movement of the tire. This has been very skilfully accomplished in the Two Part Valve, the flexibility of which always permits its retaining air under whatever shape or position the tire may assume.

PUMP WITH NIPPLE INSERTED.

[Appearance of tire section when being inflated.]

NOTE.—Further illustrations of the construction of this tire appear in a full page advertisement in this paper.

The casing is formed with a bore, with seats at each end of the said bore, facing in opposite directions. These seats are made either conical or flat, as may be desired to suit various tires. A flexible valve stem or plug is inserted in the casing, having valves applied to the said seats, and held thereto by the constant tension of the rubber stem, and also by the pressure of air when tire is inflated. It will thus be apparent that the greater the inflation the tighter the valve. The casing is also provided with a flange adapted to be united with the inner tube or lining of a tire and vulcanized thereto, thus rendering the valve a part of the tire. Both parts of the valve are entirely within the tire, and placed at the side thereof, with the entrance just above the edge of the wheel rim. So, if the tire creeps, the valve remains intact and the tire uninjured.

The manufacturers of this valve have given it two seasons of continuous tests, and during the season of 1899 expert riders were provided with tires uncemented to their wheel rims, with instructions to give the valve the severest test possible, and the results showed that not a single valve sustained an injury. It is surprising that a little rubber device like the two-headed stem, possesses such strength and tenacity. They have been subjected to an air-pressure of 230 pounds, and a further 300 pounds of hydraulic pressure per square inch, without moving in the slightest degree, or showing the least abrasion or strain.

Manufacturers should be attracted by the comparative cheapness of this valve as compared with others on the market. It can be produced in any rubber factory and in any tire vulcanizer, at a cost not to exceed that of the rubber shoe or stem used in connection with metal valves, including the cost of putting the said rubber shoe in the tire; thus directly saving the entire cost of the said metal valve. In other words, the valve costs to manufacture and put in the tire, less than the rubber shoe now used and necessary as a part of the ordinary metal valve. The valve is made in a mold with a capacity of turning out large quantities at each vulcanization, according to the size of the mold used. In a mold 24 inches in diameter, it is possible to turn out about 400 valves at each vulcanization.

The valve is inflated by inserting a small pump nipple in the bore, as shown in Figure 3, and the friction of the rubber tends to hold the nipple in place. The inner valve, *b*, is forced from its seat with every pulsation of air from the pump, and returns instantly when the pressure is withdrawn.

One of the strongest points in reference to the valve is the fact that the valve stem with its two heads may be removed from the casing at any time, for the purpose of examination, or to be cleaned, if it should so require, and then immediately replaced; or a new valve may be put in at any time without breaking the cement or removing the tire from the wheel rim.

By placing a valve inside of the tire instead of hiding it, as it were, in the wheel rim, two objects of especial value are attained. First, the valve is always accessible for inflation or for the purpose of inspection, by which it may be always kept in repair; and secondly, all boring of the wheel rim and consequent weakening thereof, is avoided. It seems quite unmechanical to cut away the vital part of one article simply to provide sufficient room for another device, when a careful adaptation of parts to a combination would permit each portion thereof, to carry on its own particular function without crowding or interfering with the other members. In this respect, the prevailing method of boring the wheel rim for the introduction of the valve, is little better than a makeshift. It should also be noticed that to avoid this cutting away of one-third the section of area of the wood rim will add very materially to its ultimate strength, and will even permit of reducing the size of the rim in many cases.

The following summary of points in favor of the Pickett valve may be made:

1. It is the cheapest valve manufactured.

2. It is the most effective, being absolutely air-tight, as no other valve on the market is.

3. It cannot get out of order, being so simple in its mechanism and consisting of only two parts as against from eight to twelve or more parts as in the ordinary metal valve. The

metal valve easily gets out of order, and the regular thing is "leaky valves."

4. It does away entirely with the foreign substance in the tire, and being of rubber, admits of a perfect job, and becomes an integral part of the tire.

5. It precludes the necessity of cutting through the rim. It therefore is immaterial whether the tire creeps or not. With this valve, a creeping tire does not mean a torn valve.

6. It is easy to repair. The only thing that could possibly get out of order would be the little plug, and a new plug can be inserted in a tire without having the tire deflated, or losing any air in the process.

7. In case dust or any foreign substance gets into the ordinary metal valve, it is out of the question to clean it, but in the case of this new rubber valve, all one has to do is to swab out the inner seating with a rag and benzine, just as the inside of the tire is wiped off before a rubber repair plug is inserted, when tire is punctured.

8. The manufacturers of high-grade tires do not look with favor upon anti-leak preparations. These, however, are used on the lower grades of tires. The new valve makes the use of any such mixture very simple indeed, for it can merely be poured in through the valve, without necessitating a hole through the tire, after which the inside seating can be thoroughly wiped out as before, if desired. When anti-leak is used in a tire that has the ordinary metal valve, the metal valve being on a level with the fabric of the tire, allows the anti-leak to run down and clog up the valve. In this new valve the inner seating standing well out from the fabric of the tire, keeps the seating of the valve perfectly dry and free from contact with the fluid.

9. It can be made complete in the tire factory, thus rendering the manufacturer independent of any outside establishment.

RETURNS FROM RUBBER PLANTING.

THE first annual report of O. H. Harrison, resident director of La Zacualpa Rubber Plantation Co., dated at San Francisco May 10, 1900, has been printed for the company. It states that, on the date mentioned, the collection of rubber was about to be begun, and that a good yield was expected; also, that the rubber would be shipped to Cotesworth & Powell, of London. He states that 30,000 rubber trees were planted by the company in 1899 and that this year's plans embraced the planting of 500,000 trees—300 to the acre, instead of 200 as in the past.

In another part of the pamphlet containing Mr. Harrison's report it is stated that "From the rubber trees on La Zacualpa Rubber Plantation which reached the tapping age during 1899, 30,000 pounds of rubber were gathered and marketed at 57 cents gold per pound." On still another page it is stated that there are 35,000 cultivated and wild rubber trees five years of age and older, now yielding rubber; 60,000 wild rubber trees from one to four years old; and the 30,000 planted last year. Five thousand trees planted ten years ago are said now to be yielding 3 pounds of rubber on an average.

A letter from the company's headquarters in San Francisco to THE INDIA RUBBER WORLD says: "We have just received a large specimen of rubber, this year's crop, from our plantation, and through the courtesy of the Goodyear Rubber Co. it is placed on exhibition in the window of their warehouse, where it is attracting great attention as a production of the Pacific coast." The plantation is located in the department of Soconusco, state of Chiapas, Mexico, near the Pacific ocean.

SOME WANTS OF THE RUBBER TRADE.

[125] FROM Pittsburgh, Pa., a correspondent writes: "Can you give us the names of any manufacturers making molded goods of pure Gutta-percha?"

[126] "Please give us some information in regard to what kind of rubber to use in making tire tape. Can you give us a formula for making tire tape?"

[127] "We should like to obtain a reference to any work treating on the subject of the action of acids and alkalies on oxydized linseed oil. We have found nothing so far on this subject, and very little on the action on the oil before being oxydized."

[128] "Will you please inform us where we can get leaves of the mastic gum tree, or *Pistacia lentiscus?* We want to use them in shoe dressing."

[129] "We want to know who makes elastic stocking frames, with a view to buying some."

[130] "Will you kindly inform me where I can get Gutta-percha—that is, name some parties that handle it?"

[131] "Can you advise us who are the manufacturers of rubber shear pads, to protect the fingers in using shears?"

[132] A crude rubber importing house have an inquiry for "Patinaki" gum, which is a new name to them, and they send to THE INDIA RUBBER WORLD as a means of gaining some information regarding it. Is it known to any of the readers of our paper?

[133] In answer to a request received by THE INDIA RUBBER WORLD from Burma for "reliable Pará rubber seed," a reply has been sent advising correspondence with J. P. William & Brother, Heneratgoda, Ceylon; A. Godefroy-Lebeuf, 4, Impasse Girardon, Paris; or L'Horticole Coloniale, Parc Leopold, Brussels.

ELECTRIC AMBULANCES IN NEW YORK.

DURING the past week the Roosevelt hospital in New York was supplied with two electric, rubber tired, motor vehicle ambulances, eacn able to travel sixteen miles an hour. They weigh 4800 pounds apiece, and cost $3000. They were gifts to the hospital, one being from a prominent physician. Similar ambulances are being made for the New York and the Presbyterian hospitals. St. Vincent's already has a motor vehicle ambulance. The new ambulances are provided with brakes which Lucius T. Gibbs, the designer, declares will bring them to a dead stop within six feet while running at full speed.

FOR BOSTON USE ONLY.

"YES," said the proprietor of the fire service factory, "that's a good ladder, but it isn't what you want. That ladder is made out of rubber."

"Out of rubber?" echoed the spokesman of the junketing committee of the Chebunk city council.

"Yes, pure rubber," the proprietor continued. "It's intended for use in Boston. It's the only way they can get a hook and ladder truck through their narrow down town streets. Why, I've seen a ladder of that size almost bent double when it tried to turn a corner. The only danger is that when the rubber snaps back it is likely to take a fireman with it. I saw a poor fellow flung half across the Common by the recoil of the rubber one morning. He got up, wiped his spectacles, said something warm in Greek, and returned to the truck."—*Cleveland Plain Dealer.*

NEWS OF THE AMERICAN RUBBER TRADE.

A NEW RUBBER SHOE FACTORY STARTED.

THE factory of the new rubber shoe concern, The Milltown India Rubber Co. (Milltown, N. J.), was formally opened on the afternoon of August 27. After a meeting of the board of directors, there was an assemblage of citizens and visitors, including several ladies, in the factory building, when Mrs. John C. Evans, wife of the president and general manager, started the machinery and christened the plant, breaking a bottle of champagne over the engine. The machinery ran until 5 P. M., when President Evans blew the first blast on the factory whistle—a sound which was cheered by the villagers as presaging a return of the prosperity with which they were familiar in the old days of the Meyer Rubber Co. The new factory occupies a pretty and convenient site on a hillside near the Raritan River railroad and the trolley road. The principal structure is a three story brick building, 268×60 feet, and an L extension of the same height, and 40×60 feet in size. At the middle a tower rises two stories higher. On the first floor is the machinery for washing and grinding rubber and the shoe cutting room, besides the crude rubber stock room. The rubber machinery outfit, at present sufficient for a daily output of 5000 to 7500 pairs of boots and shoes, was installed by the Farrel Foundry and Machine Co. (Ansonia, Conn.) It includes 10 grinders and 5 calenders. At the southwest end of the building is the boiler room, equipped with three 100 horse power boilers made by the National Water Tube Boiler Co. (New Brunswick, N. J.) and one engine made by The Fishkill Landing (N. Y.) Machine Co. The boiler room floor is of concrete. In addition to the equipment mentioned is a 15 horse power Olney & Warren steam engine for driving the elevator, cutting presses, and dryer. On the second floor are the drying and last rooms (located over the boiler and compound rooms) and also the packing and shipping departments. The offices have been handsomely fitted up on this floor. The third floor will be devoted to making shoes, including the vulcanizing department (also over the boiler room), and the varnishing room. The upper floors are reached by broad staircases and a Morse-Williams elevator, running up through the tower. On the fourth floor of the tower is a 10,000 gallon water tank for supplying the factory, and on the fifth floor a 20,000 gallon tank for supplying the Estey system of automatic fire extinguishers, which extends to every room. Fire protection is further provided for by means of automatic fire doors between the rooms, and by a 1000 gallon underwriters' fire pump, connecting with a large reservoir underground near the building, and with two hydrants, one in front and one in the rear of the factory. A fire brigade will be organized among the employés. The building will be heated by steam and lighted for a while with gas made on the premises, after which electricity is to be introduced. The varnish and cement and naphtha house is a separate brick building. Railway sidings have been planned, to convey coal and raw materials to the factory, and to carry away the finished products, without necessity for carting. The factory site embraces about six acres, and the grounds are being graded with a view to laying out an attractive lawn. The Milltown India Rubber Co. are capitalized at $200,000, the shares being held largely by citizens of Milltown. President John C. Evans is the mayor of Milltown, and a prominent citizen otherwise, and was for many years general manager and secretary of the Meyer Rubber Co. The treasurer is Matthew Suydam, a wealthy farmer near town and connected with other manufacturing enterprises and a director in the local bank. Edward H. Radel, who is interested in an important way in electric railroads, is vice-president. George F. Kohlhepp, a Milltown hotel keeper, C. W. Kulthau, a local merchant, and L. Fried and E. Stern, of New York, complete the board of directors. John P. Otto, who was Mr. Evans's head foreman in his former position, will be connected with the new factory. Two grades of goods will be made, the first branded with the company's name and the second "Crescent Rubber Shoe Co." The Western trade will be handled at Chicago by John L. Peterman, late vice president and general manager of the McCord Rubber Co. The eastern trade will be looked after by L. Fried, in New York, as well as by a representative from the works of the company direct.

JOHN C. EVANS.

STANDARD UNDERGROUND CABLE CO.

THIS very successful company is now engaged actively in the work of construction at Perth Amboy, New Jersey, their new factory at that point having been mentioned already in THE INDIA RUBBER WORLD. A letter from an authorized source says: "The company will not spare any trouble or expense to make this branch able to turn out any order, no matter how large or for what use—overhead, underground, or submarine cable work. We have made some kind of a start lately, but it will be some time yet before the plant will operate at its full capacity. In fact, some of the buildings are not yet completed." Besides the company's parent factory at Pittsburgh, they have also a plant at Oakland, California, for use in filling orders from the Pacific coast and the Far East. The company contemplate putting in a bid for the Pacific cable, if one should be constructed in the United States.

AMERICAN ELECTRICAL WORKS.

THE Washburn Wire Co. has acquired an interest in the plant of the American Electrical Works, located in East Providence, R. I., and of which Eugene F. Phillips is general manager, makers of bare and insulated copper wire, and will not build a copper wire plant, as has been reported. The management of the Washburn Wire Co. has been very reluctant to bring any additional wire machinery into operation, and has secured a location for its works immediately adjoining the plant of the American Electrical Works, in order that this purpose might be accomplished.

Over 400 guests accepted the invitation of Mr. Phillips to

attend the twenty-second annual clambake given by the American Electrical Works at the Pomham Club (Providence, R. I.) on September 13. There was a ball game in the morning, between teams picked from among the Electrical men, and bowling alleys and billiard rooms were at the disposal of the guests. Lunch was served at 11:30 o'clock and the bake proper at 2 P. M.

THE PACIFIC COAST RUBBER CO.

IN our issue of September 1 it was stated that Henry C. Norton had withdrawn from the Apsley Rubber Co. (Hudson, Mass.) and gone to the Pacific coast to engage in business. During the last week in August articles of incorporation were filed with the secretary of state of Washington, at Olympia, by the Pacific Coast Rubber Co., to carry on a general business in the sale of rubber goods, with $100,000 capital, with depots in San Francisco, Portland, Seattle, and Tacoma. Franz Richter is president and Otto Richter treasurer. Henry C. Norton is to be manager of the San Francisco branch. The new company will have the Pacific coast agency for the Boston Belting Co. and the Apsley Rubber Co. While the name of the new company will be used in connection with the business in San Francisco and Portland, the stores at Seattle and Tacoma will be those conducted hitherto by the Washington Rubber Co., which latter name will be retained in those cities. F. O. Bushnell, also connected with the Apsley Rubber Co. for several years past, has joined Mr. Norton in San Francisco. A few days before Mr. Bushnell left Hudson his associates there gave a banquet in his honor.

THE RUBBER SHOE TRADE.

ON October 31 the limit of time will have been reached within which retailers can claim the benefit of the extra 5 per cent. allowed by the leading manufacturers of rubber footwear to induce early orders. Reports do not agree as to the size of stocks left over from last season, owing to the "open winter," but it appears that buying during the summer has been rather cautious, as if retailers would prefer to pay a little more for goods later in the year, than to risk again an experience in stocking up too heavily. At the same time there has been a large production of footwear, with liberal shipments in many directions. Recent meteorological conditions have afforded comfort to many people in the trade who have indulged the hope that next winter will be more favorable for their business than was the last.

GOOD TRADE IN TENNIS GOODS.

THE new season in the tennis shoe trade begins on October 1, and terms and discounts are now being mailed to jobbers and dealers. It is understood that the trade of the past season has been the best ever experienced in goods of this class. The sales of the United States Rubber Co. are stated to have been larger by 50 per cent. than during the preceding season. Both jobbers and retailers have had large sales, which have practically closed out their stocks. F. D. Balderston, the United States Rubber Co.'s tennis sales agent, informs THE INDIA RUBBER WORLD: "The styles and patterns for the new season will be the same as in the past, with the exception that we have a complete line of new lasts. The outlook for the coming season is very good, indeed."

RUBBER SHOE FACTORY NOTES.

THE Byfield Rubber Co. (Bristol, R. I.) resumed work on September 10, running full time, with a good lot of orders in hand.——The Millville works of the Woonsocket Rubber Co. were closed from September 8 to October 1.——Late reports stated that the prospect was good for steady work all winter at the "Alice" mill of the Woonsocket Rubber Co. The shoe ticket had reached its limit, and the shoe makers were busy.——The Model Rubber Co. (Woonsocket, R. I.) are said to have received an order from Liverpool for 300 cases of shoes.——The Concord Rubber Co. (Concord Junction, Mass.) have put in additional boilers, on account of the partial failure, for the first time in thirty years, of the water power at that point. They are making 3000 pairs daily and will increase their output.

PNEUMATIC HORSE COLLAR CO.

THE stockholders were to meet in New York on September 28 to consider a proposition to convert the 130,000 shares of common stock in the treasury into 6 per cent. cumulative preferred, to be a first lien on the company's assets and to be offered to shareholders at 50 cents, the par value being $1. The company have been troubled with a lack of working capital. A voluntary assessment has also been talked of, but this plan is not likely to be adopted.

NEW INCORPORATIONS.

THE Chicago Rubber Horseshoe Co., August 25, under Illinois laws, to do a manufacturing and merchandizing business; capital, $10,000. Incorporators: William C. Boyden, Augustus Kelly, and Edmund Driever.

=Michigan Rubber Co. (Hillsdale, Mich.), September 6, under Michigan laws, to manufacture rubber sundries; capital, $12,500. Incorporators: J. D. Chappell, J. S. Parker, J. B. Chadwick, D. W. Gunn, all of Hillsdale; E. W. Covell, J. S. Parker, of Elmira, N. Y.

=Philadelphia Rubber Co., September 18, under New Jersey laws, to manufacture rubber; capital, $50,000. Incorporators: William Barnard, Alice Corment, Thomas D. McGlatherty. Principal office: No. 109 Market street, Camden, New Jersey.

=The Stamford Rubber Supply Co. (Stamford, Conn.), August 25, under Connecticut laws, to manufacture and deal in rubber goods and materials for the rubber manufacture; capital, $10,000.

=The Pacific Coast Rubber Co., August 24, under Washington laws, to deal in rubber goods; capital, $100,000. Further details are given in another column.

=The Empire Insulated Wire Co. (New York), September 24, under New York laws; capital, $25,000. Directors; John E. Roeser, New York; S. B. Ferris, Madison, N. J.; J. B. Clark, Brooklyn.

TRADE NEWS NOTES.

A LETTER from San Francisco to THE INDIA RUBBER WORLD says: "The rubber trade is improving on the Pacific coast and competition is sharper than ever before in the history of man."

=The Central Electric Co. (Chicago) have received an order from an old customer for 8830 feet (= 1.67 miles) of Okonite wires, with a request that the goods be of the same quality of insulation as that of a sample furnished, which was cut from Okonite wires put in nine years ago.

=The Sayen & Austin Rubber Co. (Philadelphia) was dissolved on September 1, William Henry Sayen retiring. The business will be continued at the same address, No. 21 North Thirteenth street, by Osgood Sayen and George Walter Schultz, under the firm name of Sayen & Schultz, Mechanical Rubber Works.

=The Cleveland (Ohio) branch of the Hartford Rubber Works Co., A. H. Scoville, manager, are keeping in stock tires for motor vehicles, and have installed a vehicle tire vulcanizer for repair work.

=Quarterly dividend No. 124 of the Boston Belting Co., of 2 per cent., has been declared, payable October 1 to shareholders of record on September 15.

=The Fossil Flour Co. have recently shipped from their factory in Nova Scotia to their warehouse in Portland, Maine, a large cargo of Fossil flour of their best quality, and are now prepared to fill all demands in a large way with promptness. The demand for this material has increased steadily year by year, and its use by rubber manufacturers is understood to be larger to-day than at any time in the past. Attention is called to the company's new advertisement on another page of this paper.

=The new show card of the Jersey Rubber Co., showing a full-sized high-vamp shoe against a gold background, with blue lettering, is exceedingly handsome. It is to be seen hanging in a great many stores where this popular brand of goods is sold.

=The Milwaukee store of the Goodyear Rubber Co. has been remodelled and enlarged. The rear of the building, formerly only two stories high, has been built up to four, in harmony with the rest of the structure.

=Grove J. Tuttle, a lawyer, was appointed trustee of the estate of the elastic web manufacturing firm of J. H. Bucklev & Son (Norwalk, Conn.), at a meeting of the creditors held at Bridgeport. The property had been under attachment since April last, in a suit for $18,000 brought by the Easthampton Rubber Thread Co., and the Messrs. Buckley finally decided to file a petition in bankruptcy. The schedule shows the liabilities to be about $35,000 and the assets $50,000.

=H. K. Felton & Co. (Boston, Mass.) are doing an excellent business in all kinds of scrap rubber, dealing particularly with large rubber manufacturers.

=Mr. Robert B. Baird, of Boston, has accepted the office of general sales agent of The Colonial Rubber Goods Co., whose works are located at Franklin, Mass., and who are manufacturers of reclaimed rubber.

=The problem of securing the toughest possible stock for tires, is one that has interested almost every manufacturer in the mechanical and tire lines, and it is only fair to say that no one ingredient has made a better wearing stock than Fossil Flour, which is being used by almost all the tire manufacturers in the United States to-day.

=The O'Sullivan Rubber Co. (Lowell, Mass.), manufacturers of rubber heels and soles, now have a western agency and stock, under the management of Carl J. Solomon, No. 216 Lake street, Chicago.

=The works of the Granby Rubber Co. (Granby, Quebec) have been equipped lately with automatic sprinklers. Their rubber reclaiming plant, which has been running since January, are giving excellent satisfaction.

=The Canadian Rubber Co. of Montreal have been notified of the award to them at the Paris Exposition for their display of rubber footwear and mechanical rubber goods.

=The John A. Roebling's Sons Co. (Trenton, N. J.) have been awarded a contract for supplying 16,000 feet (= over 3 miles) of telephone cable to the city of Cleveland, Ohio, making telephone connections with the new city waterworks cribs.

=The Goodyear Tire and Rubber Co. (Akron, Ohio) have established a branch store and distributing depot in Chicago—at No. 152 Lake street—in charge of F. A. Hastings. In New York Daniels & Walsh, No. 341 Broadway, have discontinued the sale of Chase tires and taken on the Goodyear line.

=The American and Candee factories have both resumed work on full tickets.

=W. W. Beebe writes to THE INDIA RUBBER WORLD from Honolulu: "I understand there is a rubber plantation being started in Hawaii. I will find out some data from the secretary of the interior."

=The first annual meeting of the American Bicycle Co. is to be held in New York on October 9. Pending the completion of the annual report no information is obtainable by outsiders regarding the results of the company's first year.

=The Meyer Rubber Co. have always been famous for their duck boots. This year they have improved on all former products in this line, and the company have made such a specialty of duck boots that they have decided to give them special names. Their all duck boot is now called the Hercules, and the duck vamp the Reliance.

=F. D. Balderston, the tennis selling agent of the United States Rubber Co., is on a three weeks' business trip through the west.

="Rush orders and letters hurrying goods due are the features of the business on the 'Wales-Goodyear' and 'Connecticut' rubbers, growing more emphatic daily," said Chester J. Pike, selling agent of the United States Rubber Co. "Orders during the past fortnight have been much more numerous and heavier than for some time past. The demand is not for any one particular line, but is extended over the complete variety from boots to gum goods. While we shall do our utmost to clean up all orders placed before the advance in price, those who delay too long are likely to be disappointed."

=A bit of neat advertising recently distributed throughout the rubber shoe trade is a poster in colors calling attention to the Candee goods—something which will prove ornamental in any retail store.

NEW RUBBER COMPANY BURNED OUT.

THE plant at Barberton, Ohio, of The Pure Gum Specialty Co., a new concern mentioned for the first time in THE INDIA RUBBER WORLD for August 1, was destroyed by fire on the evening of September 11. The fire evidently started in the boiler room, and as it was a frame building, and as a heavy gale was blowing, it was impossible to save the building. The company will go on, having selected a vacant factory plant in Barberton. Their orders have been placed for all molds and materials, some of which have been delivered, so that there will be little delay in filling orders. The building referred to is supplied with power, and within thirty days from the date of the fire the company expect again to be in shape to do business. H. F. Mitzell, the manager of the company, was for many years connected with the specialty department of the Akron Rubber Works, where he did a great deal of experimenting and developed many improved methods for the production of high class goods.

Correction.—In the advertisement of the Pure Gum Specialty Co., printed on another page before the writing of this paragraph, the Jeralds Manufacturing Co. (New York) are erroneously mentioned as their western agents. Eastern agents was meant, of course.

THEODORE HOFELLER & CO. (BUFFALO, NEW YORK).

THE building occupied by this firm—long established in handling scrap rubber—covers an area 75 feet square, with six floors, all being used for the purpose of grading their different stock, which embraces metals and rags as well as rubber. In addition, they occupy for storage purposes three floors 50×200 feet, in another building. Both their domestic and their foreign business in scrap rubber is very large, and is being increased continually.

AMERICAN CHICLE CO.

A DIVIDEND of 1½ per cent. on the preferred stock and a dividend of 2 per cent. on the common stock of this company have been declared, paying October 1 to all stockholders of record on September 28 at 12 o'clock, noon.

APSLEY RUBBER CO.'S EXPANSION.

WORK has been commenced on an additional building for the Apsley Rubber Co. (Hudson, Mass.) The addition will be of brick, two stories high, 31 × 40 feet, and adjoining the boiler room, south of the present factory. The new building is to be used entirely for additional drying room. Together with the existing facilities, the Apsley company will have, when the addition is completed, the largest drying capacity of any rubber factory of its size in this country. Business is reported very good in the new boot and shoe department of this company.

RECREATIONS OF RUBBER WORKERS.

THE employés of the New York Belting and Packing Co., Limited, at Passaic, N. J., had an outing on September 8 at Singac. A principal feature was a clambake, in charge of Frank Hoff, in addition to which there was a baseball game between the factory foremen and the office clerks, the former winning by a score of 22 to 21.——The office force of the Hood Rubber Co. (Boston) were the guests of Mr. George H. Hood at his home at Manchester-by-the-sea, one day early in the month. They saw the Corinthian yacht races, and afterwards lunched at Mr. Hood's home and devoted the rest of the day to sports. Such an outing is enjoyed both by the office force and by Mr. Hood regularly once a year.

RUBBER MEN PLAY BALL.

SOME of the athletes of the New York office of the United States Rubber Co., played a very exciting game of ball on Saturday, September 15, on the grounds of the Staten Island Athletic Club. The game was between the Married Men and the Single Men. This was the second game of the season, an earlier game in July having resulted in a score of 9 for the Married Men and 8 for the Single Men—a score too close to be satisfactory to either side. Their second game was more decisive, resulting in a score of 15 for the Married Men and 10 for the Single Men. The play as a whole was of a high order, and a number of the players acquitted themselves with extreme credit. Transfer Clerk Cooke umpired with acceptability to both sides. Among the players particularly to be mentioned for the excellency of their work are: Cashier W. G. Parsons, who played second base; H. B. Hubbard, H. W. Cochran, V. V. Byrnes, of the auditing department; Assistant Cashier E. J. Cantwell, E. Botzfielder, of the selling department; and F. T. Thayer, of the advertising department. After the game the two nines, with a score of their friends, sat down to dinner in the Cove Hotel, and there were speaking and singing and other entertaining features. K. M. Thompson and William Fowler of the auditing department, two of the company's expert photographers, took some interesting snap shots, both on the field and at the dinner.

BRAVE RUBBER MEN IN THE SURF.

AN exciting experience befell Mr. Robert B. Baird, the Boston representative of Messrs. Otto G. Mayer & Co. (New York) and Mr. Charles H. Morse, of A. T. Morse & Co. (New York), while bathing recently at Falmouth Heights, Mass. Both these gentlemen are expert swimmers, and had been trying to outdo each other in feats of daring. One day Mr. Morse climbed to the top of a pier said to be 60 feet high and gracefully dived off. He quickly appeared at the surface of the water, waving his hand to an admiring crowd on shore. Mr. Baird, mistaking this gesture for a challenge, quickly climbed the pier and also jumped off. Reports differ as to his position when he reached the water, the general belief being that he had assumed a sitting posture. On his return to the surface he appeared to be seized with a terrible thirst, and began at once to gulp down great draughts of salt water. Mr. Morse, with great dexterity, swam to him and, seizing him by the scruff of the neck, started for land. But Mr. Baird inclined to the theory that the nearest land was right beneath them, and started for it, assisted by the water ballast he had already taken in. The difference in opinion between the two brought about a terrific struggle, and as Mr. Baird is not a light weight, Mr. Morse soon gave evidence of tiring. The latter therefore called to his brother, Albert T. Morse, who was promenading the beach dressed in the height of fashion. The latter, in utter disregard of his attire, ran to the wreck of a boat and, with almost superhuman strength, tore off the rudder, and plunged into the sea. Managing to reach the distressed pair in time, he used the rudder with success in steering them to shore. Mr. Baird was almost unconscious, but severe rubbing externally and the liberal use of "fire water" internally brought him around. Although Mr. Baird is a total abstainer, he has stated unhesitatingly that, as between salt water and fire water, his preference is for the latter.

MONARCH RUBBER CO. (BROCKTON, MASS.)

THE fact that this company is in the hands of receivers, and that the plant and business have been offered for sale, has given the impression in some directions that work has been stopped at the factory. This is not the case, however. There has been no cessation of business, and the company continue to accept and execute orders, pending the effort to effect a reorganization and secure some additional capital needed for carrying on and extending the business.

BOSTON RUBBER SHOE EXPORTS FOR AUGUST.

	Pairs.	Value.	Value. 1899.
To England	36,984	$20,960	$6,762
To Newfoundland	242	237	....
To Nova Scotia	252	87	1,043
To Germany	1,452	..	690
To Miquelon	480	....	365
Total	37,478	$21,284	$8,860

SHIPMENT OF THE NEW CABLES.

THE United States cable steamer *Burnside* (formerly a transport) sailed from New York on September 26 for Manila, carrying 500 fathoms of cable for the extension of the cable system through the Philippines, which was discontinued over a year ago by the wreck of the cable steamer *Hooker*. The cable was built by the Safety Insulated Wire and Cable Co. (New York).

The Alaska cable expedition sailed from San Francisco on September 2, per steamer *Orizaba*. The vessel is under charter to the Kerite company, represented by George F. Porter. Other members of the cable party were R. D. Brixey, Alex Klein, of New York, who handles the cable, and John M. Klein of San Francisco. The *Orizaba* was provisioned and coaled for the round trip, which was to take one month with favorable weather. The cable is 187 miles in length, and will be laid from St. Michaels to Nome.

PERSONAL MENTION.

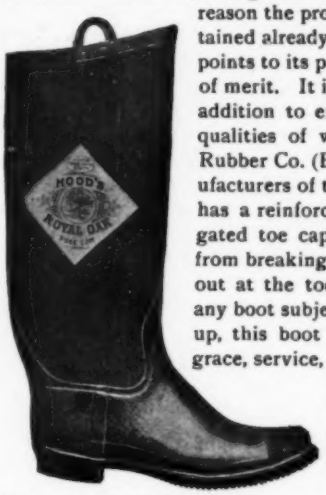
MR. TRACY S. LEWIS, secretary and treasurer of The Beacon Falls Rubber Shoe Co., was married September 3, at Wabash, Indiana, to Miss Edith Gillen, daughter of Dr. Richard H. Gillen, of that city.

WHAT is referred to as a novel feature of the charging station of the New England Electric Vehicle Transportation Co., in Boston, where some 150 vehicles already in use are provided for, and additions are expected to be made shortly, is "the tire repair work, a special room being fitted up with a vulcanizing furnace and tires are vulcanized in place. The repairs have proved very satisfactory." Thus not only is work in rubber increasing for countless uses, but the number of places in which some kind or other of rubber work is done is increasing.

NEW GOODS AND SPECIALTIES IN RUBBER.

THE "ROYAL OAK" RUBBER BOOT.

THIS is a boot which has been designed and brought out for especially hard service, and, considering its weight and substantial character, it has a notable amount of "style." This has been an exceptional year in respect to the number of new designs in rubber footwear, and for this reason the prominence which has been attained already by the "Royal Oak" boot points to its possession of no small degree of merit. It is a pure gum boot, and, in addition to embodying the usual good qualities of workmanship of the Hood Rubber Co. (Boston)—the exclusive manufacturers of this boot—the "Royal Oak" has a reinforced duck vamp and a corrugated toe cap, thus preventing the boot from breaking out at the side and wearing out at the toe—hard things to avoid in any boot subject to heavy usage. To sum up, this boot combines in a high degree grace, service, quality, and durability. It is understood that the number and extent of the orders already received for this new boot point to a very large demand for it during the present season.



BALL BEARING PUNCTURE CLOSER.

THE Sampson ball bearing puncture closer costs more than some of the ordinary rubber plugs, but against this fact the manufacturer points out the saving in time which results from its use, and the very desirable consideration that when a tire is once repaired with one of these closers, it is permanently fixed.

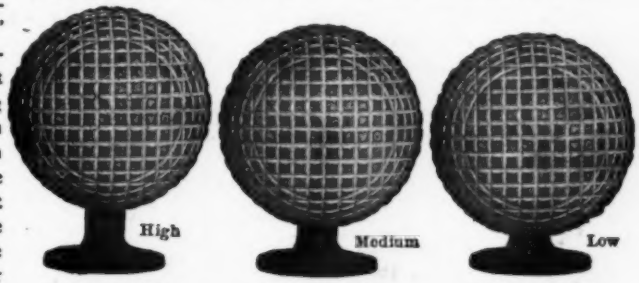
The Puncture Closer consists of (1) an oval metal plate, intended to be inserted through the puncture and to rest inside the tire; (2) a threaded wire attached to the center of the plate; and (3) a cap or nut threaded to fit the wire. When a repair is to be made the plate is pushed through the puncture, and cement is applied liberally; the tire is inflated; the cap or nut on the wire is screwed down until the plate inside the tire is fast in place; and all that part of the wire which extends outside or beyond the nut is filed off. The whole is really quite simple, with the use of the directions furnished. [American Autocycle Supply Co., Boston.]

THE WALES-GOODYEAR "MOTORMEN'S GAITER."

WITH such a variety of rubber footwear already on the market, it would seem no easy thing to invent a novelty which really fills a want and meets with an immediate demand, but the Wales-Goodyear company have done exactly this thing. Their "Motormen's Gaiter," which costs the retailer, prior to November 1, $2.14, is such a novelty, and the sales on that style have far surpassed what was anticipated when samples were placed on the market. Mr. Pike reports that since April, when the first orders were placed this season, the factory has been behind on orders for motormen's gaiters. As a matter of fact, the mill had to double up the making ticket on this kind, and the prospects are that the capacity for production will have to be still further increased. This gaiter is a high-cut shoe, standing about 11 to 12 inches high. It has a snow-excluding pocket, extended at the top, and is "all lace" down the front. Its name implies the specific purpose for which it was built, yet its popularity among lumbermen has been indicated by the numerous orders coming from the trade in the northwest.

THE "RUBBER NECK" GOLF TEE.

AN advantage in the use of the rubber tee in playing golf is that it is always ready, besides which it does away with the disagreeable handling of soil. Furthermore, it is desirable always to have a uniform height of tee, which is attained by having a tee ready made. The "Rubber Neck" tee is made in three heights—high, medium, and low. The size to be used depends upon the ability of the player. The base of these tees is made so small that it is impossible for the club to come in contact with the tee without first hitting the ball. Vardon and many other prominent players have commended this tee. It is retailed by sporting goods houses at 10 cents. [Rubber Neck Tee Co., No. 69 South street, Boston.]



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NO. 1 W. T. & CO. NEBULIZER.

IN this newly patented article the metal parts are all nickel plated and polished, the bottle and globe are of glass, and the removable throat and nasal tips are of hard rubber. It has been designed with particular reference to the need often experienced of a very fine subdivision of medicated oils. The claim is made that by the use of this instrument may be produced a vapor much finer than the spray obtainable from any of the atomizers now in use. The "No. 1 W. & T. Co." nebulizer is sold to the trade, each packed separately in a handsome box, at $18 per dozen—with liberal discounts to dealers. [Whitall, Tatum & Co., Nos. 44-46 Barclay street, New York.]

THE NEW YORK VEHICLE TIRE.

THE New York Belting and Packing Co., Limited, have signalized their reëntrance into the tire trade by bringing out a new carriage tire, to which the name above has been given. The idea is to provide a tire that will be safe and economical to use—thus overcoming some of the objections to the pneumatic tires now in use—and one that can be applied to all heights and styles of wheels. In order to overcome any liability to puncture this tire is provided with heavy walls of special construction, so that, if the tire should be punctured, or if it receives a bad cut, it will not collapse. It only deflates a little, as it has in itself enough carrying power to sustain the load, and not be cut by the rim. The inner tube is reinforced with a secondary air tube, to prevent leakage by the lug or valve stem. The tire, by reason of the thick walls, does not depend upon air pressure alone for carrying power, the air being used principally to control the riding qualities. In place of 1¾ inch and 2 inch regular pneumatic construction, the new tire uses 1½, and in place of 2¼ inch and 2½ inch, it uses 1¾ inch. This permits the use of a higher wheel, which, with a tire of smaller cross section, gives a wheel of better proportions than with the low wheels and large clumsy wheels now in use. The New York Vehicle tire will be shown at all the carriage and automobile exhibitions this fall.

CONSOLIDATION IN RUBBER TIRES.

A REPORT appeared in the newspapers on September 28, to the effect that the Hartford Rubber Works Co. had bought out the Mechanical Fabric Co. (Providence, R. I.) and would remove the latter's machinery to Hartford. THE INDIA RUBBER WORLD is authorized to say: "It is not correct to state that the Hartford Rubber Works has purchased the plant and business of the Mechanical Fabric Co. The latter company owned certain valuable patents on bicycle, automobile, and carriage tires, which the Hartford Rubber Works Co. purchased the right to use, and in connection therewith took over certain machinery to be used in manufacturing tires under said patents."

The Hartford plant thus takes over the manufacture of the "Conqueror" and "Flexifort" tires. Besides, the Hartford Rubber Works Co. have become sole selling agents for the New Brunswick (N. J.) Tire Co. and The India Rubber Co. (Akron, Ohio), giving them practical control of the output of the "New Brunswick" and "India" bicycle tires. Having the "Hartford" tire to start with, it would thus seem that the Hartford company are in a very fair way not only to maintain their already important position in the tire trade, but to strengthen it very materially.

BREAK IN CYCLE TIRE PRICES.

THERE have been some important developments of late in respect to prices of bicycle tires manufactured under the Tillinghast patents. The last INDIA RUBBER WORLD reported the failure which followed an attempt to enjoin a prominent manufacturer at Akron from marketing certain tires below the standard fixed by the Tire Association, since which time there has been dissatisfaction in the trade over the situation. It is reported that at a recent meeting of the Association it was tacitly agreed that its members could sell their product at their own price, provided they paid the royalties charged by the Single Tube Automobile and Bicycle Tire Co. Naturally the trade has been in an unsettled condition since, and it is common talk that, in order to avoid a season of disastrous price cutting, there will be an early attempt to bring about another agreement as to prices—particularly on unguaranteed tires.

TO STOP WORK AT NEWTOWN.

THE New York Belting and Packing Co., Limited, have definitely announced that their factories at Sandy Hook, near the picturesque village of Newtown, Fairfield county, Connecticut, are to be closed. Such a step has been in anticipation for two years or more, and preparations have been made meanwhile for the production of all the company's output of rubber goods at their factory at Passaic, New Jersey. The New York Belting and Packing Co. were incorporated in 1856. The manufacture, then a limited line of vulcanized rubber specialties on a small scale, was carried on in a factory once used by Charles Goodyear, at Sandy Hook, and remodelled to suit the needs of the new company. The Goodyear plant soon burned down, but was speedily replaced by a larger factory, to which later was added a second factory at Sandy Hook. In 1869, in order that part of their manufacturing facilities might exist nearer New York, the company erected a factory in New Jersey, and this has been developed gradually until it soon will be able to accommodate all of the large production of the company.

RUBBER NOTES FROM EUROPE.

DIVIDENDS of the W. T. Henley's Telegraph Works Co., Limited (London), who, by the way, are manufacturers of mechanical rubber goods and golf balls, are payable on September 1 for the first six months of 1900, at the rate of 8 per cent. on the ordinary shares and 4½ per cent. on the preferred.

=The Continental Caoutchouc and Guttapercha Co. (Hanover) were awarded a gold medal—the highest prize—for their display of motor and cycle tires at the recent Automobile exhibition at Nuremberg.

=Emil Spannagel, managing director of the Berlin-Frankfort India Rubber Co., has been elected a member of the board of the chemical section of the Berliner Berufsgenassenschaft, a scientific society of important standing.

=Paul Brodtmann, manager of the London branch of the Continental Caoutchouc and Guttapercha Co. (Hanover), recently returned from a sixteen weeks military exercise in Germany.

PROPOSED ELASTIC WEBBING COMBINE.

AMONG the many new industrial combinations which have been suggested lately in England is one to control the manufacture of elastic webbing. This business, which is centered largely in Leicester, Coventry, and Derby, is somewhat compact and specialized, for which reason it is considered that a joint stock combination of the proprietors might be arranged more readily than in the case of many other industries.

POSITION WANTED.

SUPERINTENDENT of rubber reclaiming factory with 10 years' experience is looking for a change; understands wages values, the handling of employees, and all material matters connected with this branch of rubber works. As an office manager he is capable of successfully handling the largest factory. Address L. F., care of THE INDIA RUBBER WORLD.

SITUATION OPEN.

WANTED.—A traveling Salesman for a Canadian Rubber Mechanical Goods factory; one who can sell Belting and Packing; an exceptional opportunity for a really first class man. Address BELTING, care of THE INDIA RUBBER WORLD.

REVIEW OF THE CRUDE RUBBER MARKET.

THE market for Pará grades has undergone something of a change since our last report, in respect both to greater activity and excitement at Pará and strong bidding at the advance in prices which has taken place, and also in the amount of business being done in England, despite the stiffening tendency of the market. Here the market has been quiet but firm. Early in the month consumers appeared disposed to resist the advance which set in at that time and has continued throughout the month, resulting in a net increase of 2 or 3 cents per pound for the different Pará grades. Later, buying became more liberal, and a good business has been done.

Rubber cargoes coming to New York have been sold largely to arrive, and hence have not added materially to the stocks in open market. Business in Centrals and Africans has been quiet and prices steady. New York prices September 29 were:

PARÁ.		AFRICAN.	
Islands, fine, new	98 @99	Tongues	58 @59
Islands, fine, old	100 @101	Sierra Leone	70 @71
Upriver, fine, new	102 @103	Benguella	64 @65
Upriver, fine, old	104 @105	Congo ball	59 @60
Islands, coarse, new	56 @57	Cameroon ball	59 @60
Islands, coarse, old	62 @63	Flake and lumps	45 @46
Upriver, coarse, new	73 @74	Accra flake	18 @19
Upriver, coarse, old	74 @75	Accra buttons	61 @62
Caucho (Peruvian) sheet	57 @58	Accra strips	64 @65
Caucho (Peruvian) strip none imported now.		Lagos buttons	59 @60
Caucho (Peruvian) ball	68 @69	Lagos strips	62 @63
CENTRALS.		Liberian flake	@
Esmeralda, sausage	65 @66	Madagascar, pinky	@
Guayaquil, strip	57 @58	Madagascar, black	@
Nicaragua, scrap	64 @65	GUTTA-PERCHA.	
Mangabeira, sheet	51 @52	Fine grade	1.75
EAST INDIAN.		Medium	1.45
Assam	82 @83	Hard white	1.20
Borneo	37 @48	Lower sorts	65
		Balata	

Late Pará cables quote:

	Per Kilo		Per Kilo
Islands, fine	7$500	Upriver, fine	8$500
Islands, coarse	3$500	Upriver, coarse	3$500

Exchange 10 3/32 *d.*

STATISTICS OF PARA RUBBER (METRIC TONS).

NEW YORK.

	Fine and Medium.	Coarse.	Total 1900.	Total 1899.	Total 1898.
Stocks, July 31	416	82 =	498	351	55
Arrivals, August	380	219 =	599	526	567
Aggregating	796	301 =	1097	877	622
Deliveries, August	312	219 =	531	564	534
Stocks, August 31	484	82 =	566	313	88

	PARÁ.			ENGLAND.		
	1900.	1899.	1898.	1900.	1899.	1898.
Stocks, July 31	370	260	135	1500	670	515
Arrivals, August	1200	1010	1380	425	1245	455
Aggregating	1570	1270	1515	1925	1915	970
Deliveries, August	1315	575	1165	725	1560	490
Stocks, August 31.	255	695	350	1200	355	480

	1900.	1899.	1898.
World's supply, Aug. 31 (excluding Caucho)	2629	1697	1488
Pará receipts, July 1 to August 31	1197	2295	2510
Afloat from Pará to United States, August 31.	170	185	570
Afloat from Pará to Europe, August 31	345	420	
Afloat from Europe to United States, Aug. 31.	140		

NEW YORK RUBBER PRICES FOR AUGUST. (NEW RUBBER.)

	1900.	1899.	1898.
Upriver, fine	93 @99	1.00@1.03	1.03@1.06
Upriver, coarse	68 @71	77 @ 79	86@ 89
Islands, fine	88 @97	95 @ 97	1.00@1.03
Islands, coarse	55 @58	62 @ 66	68@ 72
Cametá, coarse	55 @59	62½@ 66	74@ 75

In regard to the financial situation, Albert B. Beers (broker in India-rubber, No. 58 William street, New York), advises us as follows:

"The general money market has been firmer during September than for some months previously, and the demand for paper has fallen off, most of the city banks and a good many out-of-town ones being entirely out of the market. The best rubber paper has been taken moderately at 4½@5 per cent. and names not so well known 5½@6 per cent., and in some instances even a little higher."

CRUDE RUBBER IN GERMANY—OFFICIAL FIGURES.

WEIGHT (IN POUNDS.)

	1898.	1899.	1900.
Imports—January to July	11,333,740	13,902,900	15,696,340
Exports—January to July	2,692,140	3,959,780	4,634,960
Net imports	8,641,600	9,943,120	11,361,380

VALUE (IN MARKS.)

	1898.	1899.	1900.
Imports—January to July	23,183,000	35,389,000	39,954,000
Exports—January to July	4,405,000	8,100,000	9,481,000
Net imports	18,778,000	27,289,000	30,473,000

GUTTA-PERCHA.

EXPORTS from Singapore for the first six months of 1900 compared with the same period of former years, are reported, as follows by the Singapore Exchange (in pounds):

YEARS.	Great Britain.	Other Europe.	United States.	Total.
1900	5,167,866⅔	1,608,133⅓	376,666⅔	7,152,666⅔
1899	4,345,066⅔	2,678,666⅔	416,400	7,440,133⅓
1898	3,236,133⅓	1,685,066⅔	1,500,533⅓	6,421,733⅓

Evidently the figures are in error with regard to exports to the United States in 1898, probably through the inclusion of Gutta-jeletong (Pontianak). A record of the latter gum is now being kept, and it is probable that a better classification of exports will prevail hereafter.

Singapore prices of Gutta-percha of late have been as follows, the first column giving the quotation per picul (133⅓ pounds), in silver money, and the second the equivalent per pound in United States gold:

	Per Picul. (Silver.)	Per Pound. (Gold.)
First quality	$430@500	$1.57@1.82
Medium	250@430	.91@1.57
Lower	50@250	.19@ .91

During the summer there were rather better supplies than for some time past, particularly in fine grades. Prices have been very firm.

PONTIANAK.

EXPORTS from Singapore for the first six months of this and last year, and for the whole of 1899, were as follows (in pounds):

	Great Britain.	Other Europe.	United States.	Total.
6 mos. 1900	1,933,200	253,000	2,623,800	4,810,000
6 mos. 1899	33,466⅔	421,866⅔	4,535,600	4,990,933⅓
1899	336,933⅓	551,866⅔	9,998,266⅔	10,887,066⅔

LIVERPOOL.

WILLIAM WRIGHT & Co. reported [September 1] in regard to fine Pará: "The improvement mentioned at the end of last month has continued with a few fluctuations, and an increased demand has resulted in a good business being done. If the supplies in Pará do not increase, we are inclined to think prices must go still higher. Sales on spot, total 260 tons, closing with buyers of Upriver at 4*s.* 2*d.*, sellers at 4*s.* 2½*d.*, buyers Island at 4*s.* 1¼*d.*, sellers at 4*s.* 1½*d.* A good business has been done for delivery, Upriver at 4*s.*@4*s.* 2½*d.*, Island at 4*s.*@4*s.* 1*d.*, closing with buyers Upriver at 4*s.* 1½*d.* and Island at 4*s.* 1*d.*, sellers Upriver at 4*s.* 2*d.*, and Island at 4*s.* 1½*d.*"

J. J. Fischer & Co., Limited, reported stocks in the Liverpool market as follows:

	May 31.	June 30.	July 31.	Aug. 31.
Pará: Fine	1097 tons	1043 tons	1030 tons	864 tons
Medium	154 "	124 "	138 "	85 "
Negroheads	419 "	315 "	339 "	286 "
African	834 "	777 "	823 "	710 "
Peruvian	256 "	455 "	381 "	144 "
Mangabeira	289 pkgs	297 pkgs	205 pkgs	195 pkgs
Pernambuco	25 "	75 "	86 "	41 "
Ceará	1393 "	1407 "	1557 "	1393 "
Maniçoba	597 "	847 "	396 "	575 "
Assaree	101 "	121 "	166 "	166 "
Mollendo			411 "	156 "

At a meeting of creditors of Charles MacIver and Thomas Muir Kerr, who carry on business in Liverpool as African merchants under the style of W. B. MacIver & Co., and on the west coast of Africa as Charles MacIver & Co., the official receiver stated that the firm's liabilities amounted to £224,209 (=$1,121,045) and their assets to £77.033 (= $385,165). After various propositions had been discussed, with a view to a settlement which should allow the business to be continued, on the basis of 15 shillings to £1, it was resolved to postpone to a further meeting a final vote.

LONDON.

JACKSON & TILL, under date of September 1 report:

		1900.	1899.	1898.
LONDON	Pará (English tons)	—	—	1
	Borneo	193	86	129
	Assam and Rangoon	41	28	13
	Other sorts	544	418	433
	Total	778	532	576
LIVERPOOL	Pará	1200	703	486
	Other sorts	1192	753	484
	Total, United Kingdom	3170	1988	1546
	Total, August 1	3645	1878	1469
	Total, July 1			
	Total, June 1	3624	2510	0159
	Total, May 1	3952	2129	1728
	Total, April 1	3104	1942	1824
	Total, March 1	1917	1784	1344

PRICES PAID DURING AUGUST.

	1900.	1899.	1898.	
Pará fine	3/11½@4/2½	4/2½@4/3½	4/4	@4/5
Negroheads, Islands	2/2½ @2/3	2/7		2/10½
Negroheads, scrappy	2/10½@2/11	3/2½	3/9	@3/9½
Bolivian	4/0½ @4/2½	4/3 @4/3½		4/4½

BRITISH IMPORTS OF INDIA-RUBBER.

[JANUARY 1 TO AUGUST 31—OFFICIALLY REPORTED.]

	1898.	1899.	1900.
Imports (pounds)	36,213,408	34,270,888	42,306,208
Exports	22,477,952	22,421,392	23,055,424
Net imports	13,735,456	11,849,496	19,250,784

GUTTA-PERCHA.

Imports (pounds)	4,571,840	5,023,872	9,050,720
Exports	632,016	529,872	961,632
Net imports	3,839,824	4,494,000	8,089,088

EXPORTS FROM JAVA AND MADURA.

[FROM A BRITISH CONSULAR REPORT.]

	1896.	1897.	1898.	1899.
India-rubber (pounds)	45,025	59,840	67,728	78,880
Gutta-percha	3,100	3,128	25,704	146,744

ANTWERP.

TO THE EDITOR OF THE INDIA RUBBER WORLD: In yesterday's sale by inscription about 286 tons were sold out of 464 tons offered:

Congo sorts	360,350 kilos offered.	281,544 kilos sold.
Other sorts	104,130 kilos offered.	5,000 kilos sold.
Total	464,480 kilos offered.	286,544 kilos sold.

There was a fair demand and most of the Congo sorts found buyers. Prices were irregular, but on the average came up to valuations. The two lots of Lopori were sold, one at the valuation of 8.05 francs, the other 2½ centimes above valuation, *i. e.*, at 8.07½ francs. The next sale by inscription will probably take place October 15. Stock on hand September 14, 920,143 kilograms.

C. SCHMID & CO.

Antwerp, September 15, 1900.

ANTWERP RUBBER STATISTICS FOR AUGUST.

DETAILS.	1900.	1899.	1898.	1897.	1896.
Stocks, July 31 (kilos)	1,133,702	345,205	256,263	121,032	68.180
Arrivals, August	498,188	299,604	108,737	194,193	115.434
Aggregating	1,631,890	644,809	365,000	316,125	183,614
Sales in August	575,766	244.377	220,474	158,847	126,314
Stocks, August 31	1,056,124	400,432	144,526	157,278	57,300
Arrivals since Jan. 1	4,167,418	2,395,870	1,222,948	1,064,830	539,973
Sales since January 1	3,403,285	2,258,778	1,172,885	1,046,820	533,668

ARRIVALS AT ANTWERP.

AUGUST 23.—By the steamer *Stanleyville*, from the Congo:

Bunge & Co. (kilograms)	143,000	
Bunge & Co. (Société Anversoise)	20,000	
Bunge & Co. (Plantations Lacourt)	2,600	
Société A B I R.—Lopori rubber	47,000	
Crédit Commercial Congolais—Lulongo	6,500	
Société Coloniale Anversoise (Lomami)	9,200	
Société Coloniale Anversoise—Kamerun	342	
Société Coloniale Anversoise (Haut Congo)	79,996	
Ch. Dethier (Haute Sangha)	1,200	
Cie. Commerciale des Colonies (La Kassaienne)	5,000	
Trafic Congolais	1,250	
Société Française du Haut Congo	4,250	
W. Mallinckrodt & Co. (Société Alimaienne)	150	320,488

SEPT. 12.—By the steamer *Leopoldville*, from the Congo:

Bunge & Co. (kilograms)	121,820	
Bunge & Co. (Equatoriale Congolaise)	13.457	
Société A B I R	53,670	
Société Coloniale Anversoise (Haut Congo)	26,000	
Ch. Dethier (Belgika)	7,500	
M. S. Cols (Végétaux)	7,100	228,907

AUGUST EXPORTS FROM PARA.

FROM.	Kilos.	TO	Kilos.
Pará	1,021,763	United States	624,603
Manáos	360,948	England	695,025
Iquitos	33,245	Other Europe	96,328
Total	1,415,956	Total	1,415,956

Mail advices from Pará dated September 10 report: "With the continuance of good and general demand, assisted by easier exchange, the market has presented quite an animated appearance, although the amount of business cannot yet attain any considerable proportions on account of the still meager supplies. Estimates of the present crop have already begun to elicit various opinions, but, although it is very early in the

season to form any ideas approximating accuracy, it appears that judging from the preparations made as to the employment of hands and their maintenance, no such good result as that of the last crop can be expected, unless unusually favorable circumstances intervene, and if fevers should break out in some districts, as unfortunately is frequently the case, a shortage will be certain."

The house of Prüsse, Dusendschön & Co. (Manáos) paid 5,600,680 milreis to the governments of Amazonas and Pará for export duties on rubber during the first six months of 1900, the value of the milreis varying from $7\frac{11}{16}d.$ to $10\frac{5}{16}d.$, or about 15 to 21 cents.

Telegraphic communication has been restored between Pará and Manáos. After it had become apparent that the working of a cable laid in the river channel was impracticable, a new line was laid along the shore of the main stream—on posts overland wherever possible, with stretches of submarine cable across the side streams. The latest interruption of the line was due to the work of vandals in cutting out a piece of land wire 50 meters in length. The breach has been repaired, and the government has promised to try to prevent a recurrence of such damage, but the greater part of the country traversed by the telegraph is so remote from the seat of government that no strong assurance of protection is felt.

The crude rubber trade generally may have reason to be interested in the condition of the harbor at Pará. It is again affirmed that, on account of the silting up on the river at that point, the government will be forced to take steps to have the river dredged. The depth of the river at the custom house is now only 18 feet at low water, whereas 27 feet is required by a number of ocean steamers. It is understood that the government is disposed to consider propositions for dredging the river channel to that depth, for a distance of 3½ miles and half a mile wide, and for keeping the channel open.

IMPORTS FROM PARA AT NEW YORK.

[All the Figures Denote Pounds.]

August 30.—By the steamer *Maranhense*, from Manáos and Pará:

Importers.	Fine.	Medium.	Coarse.	Caucho.	Total.
New York Commercial Co.	95,100	8,600	69,100	1,200=	174,000
Reimers & Co.	106,800	18,700	48,700	=	174,200
Crude Rubber Co.	55,700	5,700	36,100	=	97,500
Otto G. Mayer & Co.	6,400	300	22,900	=	29,600
Albert T. Morse & Co.	700	.....	5,000	8,200=	13,900
Czarnikow, McDougal & Co.	8,600	5,000	700	=	14,300
Total.	273,300	38,300	182,500	9,400=	503,500

September 5.—By the steamer *Hubert*, from Manáos and Pará:

Reimers & Co.	95,400	14,700	42,300	=	152,400
New York Commercial Co.	77,200	7,800	40,800	300=	126,100
Crude Rubber Co.	30,300	2,500	14,000	=	46,800
Otto G. Mayer & Co.	.....	.....	16,600	=	16,600
Albert T. Morse & Co.	4,000	700	6,300	=	11,000
Hagemeyer & Brunn.	2,000	.....	700	=	2,700
Total	208,900	25,700	120,700	300=	355,600

September 13.—By the steamer *Fluminense*, from Pará:

New York Commercial Co.	60,500	15,200	53,300	9,500=	138,500
Crude Rubber Co.	61,700	10,000	42,400	=	114,100
Albert T. Morse & Co.	.....	4,000	37,300	11,700=	53,000
Reimers & Co.	17,800	3,600	24,100	=	45,500
Otto G. Mayer & Co.	.....	.....	15,400	=	15,400
Total.	140,000	32,800	172,500	21,200=	366,500

September 24.—By the steamer *Paraense*, from Manáos and Pará:

Reimers & Co.	102,400	34,000	24,800	=	161,200
New York Commercial Co.	45,700	9,000	32,000	800=	87,500
Crude Rubber Co.	40,000	13,600	18,700	200=	72,500
Albert T. Morse & Co.	3,400	5,200	40,200	2,200=	51,000
Otto G. Mayer & Co.	.....	.....	12,800	=	12,800
Hagemeyer & Brunn.	5,300	400	700	=	6,400
Total.	196,800	62,200	129,200	3,200=	391,400

[NOTE.—The steamer *La Plata* sailed from Pará September 21 with 300 tons of rubber for New York.]

PARA RUBBER VIA EUROPE.

	Pounds.	
AUG. 25.—By the *New York*=Southampton:		
Albert T. Morse & Co. (Caucho)	15,000	
Otto G. Mayer & Co. (Caucho)	24,500	39,500
AUG. 27.—By the *Umbria*=Liverpool:		
George A. Alden & Co. (Fine)	5,600	
George A. Alden & Co. (Coarse)	5,000	
George A. Alden & Co. (Caucho)	30,600	
Crude Rubber Co. (Coarse)	5,600	
Crude Rubber Co. (Caucho)	30,600	
Reimers & Co. (Coarse)	16,600	
Reimers & Co. (Caucho)	17,000	
Otto G. Mayer & Co. (Fine)	32,200	
Albert T. Morse & Co. (Coarse)	11,300	155,500
AUG. 29.—By the *Oceanic*=Liverpool:		
Geo. A. Alden & Co. (Fine)	6,000	
George A. Alden & Co. (Coarse)	5,500	
Crude Rubber Co. (Fine)	6,000	
Crude Rubber Co. (Coarse)	5,500	23,000
SEPT. 1.—By the *Campania*=Liverpool:		
George A. Alden & Co. (Fine)	11,200	
George A. Alden & Co. (Coarse)	6,700	
Crude Rubber Co. (Fine)	11,200	
Crude Rubber Co. (Coarse)	6,700	
Reimers & Co. (Coarse)	17,000	52,800
SEPT. 4.—By *La Touraine*=Havre:		
Albert T. Morse & Co. (Caucho)		22,500
SEPT. 5.—By the *Teutonic*=Liverpool:		
George A. Alden & Co. (Fine)	8,000	
George A. Alden & Co. (Coarse)	6,000	
Crude Rubber Co. (Fine)	8,000	
Crude Rubber Co. (Coarse)	6,000	
Albert T. Morse & Co. (Fine)	11,500	
Reimers & Co. (Caucho)	20,000	59,500
SEPT. 8.—By the *Etruria*=Liverpool:		
Reimers & Co. (Fine)	22,700	
A. T. Morse & Co. (Fine)	11,500	34,200
SEPT. 13.—By the *Servia*=Liverpool:		
Reimers & Co. (Fine)		3,000
SEPT. 15.—By the *Lucania*=Liverpool:		
George A. Alden & Co. (Fine)	17,200	
Crude Rubber Co. (Fine)	17,900	
Otto G. Mayer & Co. (Fine)	13,000	47,200
SEPT. 21.—By the *St. Germain*=Havre:		
A. T. Morse & Co. (Caucho)		26,000

OTHER IMPORTS AT NEW YORK.

CENTRALS.

	Pounds.	
AUG. 25.—By the *Yucatan*=Mexico:		
H. Marquardt & Co	1,800	
Jacobs & Allison	1,000	
Thebaud Brothers	500	
Fred Probst & Co.	200	
E. Steiger & Co.	300	
Louis Monjo, Jr. & Co.	500	4,300
AUG. 28.—By the *Alliance*=Colon:		
Hirzel, Feltman & Co	12,800	
Piza, Nephews & Co.	6,800	
Roldan & Van Sickel	6,500	
Czarnikow, McDougal & Co.	3,300	
Dumarest & Co.	2,800	
G. Amsinck & Co.	1,800	
Kunhardt & Co	2,100	
A. P. Strout	1,800	
Lanman & Kemp	900	
Kimenhorst & Co.	400	
Jimenez & Escobar	400	
A. D. Straus & Co.	300	39,900
AUG. 28.—By the *Alleghany*=Greytown:		
Andreas & Co	2,500	
A. P. Strout	2,000	
Flint, Eddy & Co.	1,000	
A. D. Straus & Co.	500	
L. Johnson & Co.	500	
Kunhardt & Co	300	
For London	700	7,500
AUG. 28.—By the *Orange Nassau*=Trinidad:		
Thebaud Bros. (Angostura Fine)	5,000	
Thebaud Bros. (Angostura Coarse)	2,000	7,000
AUG. 29.—By the *Themis*=Belize:		
Eggers & Heinlein.	1,000	
Harburger & Stack	500	1,500
AUG. 30.—By *El Monte*=New Orleans:		
A. T. Morse & Co.	4,500	
W. R. Grace & Co	2,000	6,500
AUG. 31.—By the *Cap Frio*=Hamburg:		
Reimers & Co		1,600
SEPT. 1.—By the *Campania*=Liverpool:		
Livesey & Co		4,300
SEPT. 1.—By *El Norte*=New Orleans:		
A. N. Rotholz	1,500	
G. Amsinck & Co.	500	2,000
SEPT. 1.—By the *Ragusa*=Bahia:		
J. H. Rossbach & Bros.	20,000	
Lawrence Johnson & Co.	1,500	21,500
SEPT. 4.—By the *Europe*=London:		
Otto G. Mayer & Co.		11,500
SEPT. 5.—By the *City of Washington*=Mexico:		
H. Marquardt & Co	7,500	
E. Steiger & Co.	1,500	
James Hardman	500	9,500
SEPT. 5.—By the *Teutonic*=Liverpool:		
Otto G. Mayer & Co.		11,800
SEPT. 6.—By *El Paso*=New Orleans:		
W. V. Kreamer		3,500
SEPT. 7.—By the *Patricia*=Hamburg:		
Livesey & Co		3,000
SEPT. 8.—By the *Orizaba*=Mexico:		
Graham, Hinckley & Co.	2,000	
E. Steiger & Co.	2,500	
H. Marquardt & Co.	1,500	
F. Halberstedt & Co.	200	6,200
SEPT. 10.—By the *Alene*=Savanilla:		
Kunhardt & Co.	4,000	
A. P. Strout	4,000	
G. Amsinck & Co.	700	
A. D. Straus & Co.	500	
Punderford & Co.	800	
Jimenez & Escobar	300	
For Antwerp	2,500	12,600
SEPT. 11.—By the *Finance*=Colon:		
Isaac Brandon & Bros.	6,600	
Flint, Eddy & Co	8,200	
Mosle Bros.	6,000	
Roldan & Van Sickel	4,700	

CENTRALS—Continued.

G. Amsinck & Co	4,500	
D. A. De Lima & Co	4,200	
L. N. Chemedlin & Co	2,900	
Silva Bossmeir & Co	2,500	
Lanman & Kemp	2,100	
Hirzel, Feitman & Co	1,600	
W. Loaiza & Co	900	
E. Schetelin & Co	700	
Kunhardt & Co	500	
R. G. Barthold	400	
Piza Nephews & Co	300	
A. P. Strout	100	46,200

SEPT. 13.—By the *Servia*=Liverpool:

Joseph Cantor		4,500

SEPT. 13.—By the *Prins Willem III.*=Trinidad:

Thebaud Bros. (Angostura Fine)	8,500	
Thebaud Bros. (Angostura Coarse)	5,000	13,500

SEPT. 14.—By the *Graf Waldersee*=Hamburg:

Reimers & Co. (Angostura Coarse)		2,500

SEPT. 15.—By the *Matanzas*=Mexico:

L. N. Chemedlin & Co	600	
H. Marquardt & Co	500	
E. Steiger & Co	500	
Suzarte & Whitney	600	2,200

SEPT. 17.—By the *Proteus*=New Orleans:

A. T. Morse & Co	5,500	
W. R. Grace & Co	2,000	7,500

SEPT. 17.—By the *Athos*=Port Limon:

W. H. Crossman & Bros	900	
United Fruit Co	500	
Samper & Co	600	
For London	900	2,900

SEPT. 20.—By the *Hudson*=Colon:

G. Amsinck & Co	4,200	
W. R. Grace & Co	2,400	
A. P. Strout	2,700	
Jimenez & Escobar	2,300	
Lanman & Kemp	1,300	
Kunhardt & Co	1,200	
L. Johnson & Co	600	
L. N. Chemedlin & Co	500	15,200

AFRICANS.

POUNDS.

AUG. 27.—By the *Caledonian*=Liverpool:

George A. Alden & Co	22,000	
Crude Rubber Co	22,000	44,000

AUG. 27.—By the *Umbria*=Liverpool:

George A. Alden & Co	28,500	
Crude Rubber Co	13,500	
Reimers & Co	1,000	43,000

AUG. 28.—By the *Southwark*=Antwerp:

Albert T. Morse & Co	49,000	
George A. Alden & Co	9,000	
Crude Rubber Co	9,000	67,000

AUG. 29.—By the *Oceanic*=Liverpool:

George A. Alden & Co	16,000	
Otto G. Mayer & Co	56,000	72,000

AUG. 31.—By the *Cap Frio*=Hamburg:

George A. Alden & Co	11,500	
Crude Rubber Co	8,000	
Livesey & Co	10 000	

AFRICAN—Continued.

Reimers & Co	10,000	39,500

SEPT. 1.—By the *Campania*=Liverpool:

Otto G. Mayer & Co		19,000

SEPT. 1.—By the *Iberian*=Liverpool:

George A. Alden & Co	16,500	
Crude Rubber Co	14,000	30,500

SEPT. 4.—By the *Peninsular*=Lisbon:

George A. Alden & Co	22,800	
Crude Rubber Co	20,000	42,800

SEPT. 5.—By the *Westernland*=Antwerp:

George A. Alden & Co	82,000	
Crude Rubber Co	82,000	
Albert T. Morse & Co	37,500	201,500

SEPT. 5.—By the *Teutonic*=Liverpool:

George A. Alden & Co	40,000	
Reimers & Co	8,500	48,500

SEPT. 7.—By the *Patricia*=Hamburg:

Reimers & Co		7,000

SEPT. 8.—By the *Etruria*=Liverpool:

George A. Alden & Co	60,000	
Crude Rubber Co	5,500	
Livesey & Co	2,500	68,000

SEPT. 10.—By the *Georgian*=Liverpool:

Reimers & Co		23,000

SEPT. 12.—By the *Kensington*=Antwerp:

Albert T. Morse & Co		65,000

SEPT. 14.—By the *Germanic*=Liverpool:

George A. Alden & Co	23,500	
Crude Rubber Co	10,000	33,500

SEPT. 14.—By the *Graf Waldersee*=Hamburg:

George A. Alden & Co		3,000

SEPT. 15.—By the *Lucania*=Liverpool:

Reimers & Co	10,000	
Jas. Latham & Sons	1,500	11,500

SEPT. 20.—By the *Noordland*=Antwerp:

A. T. Morse & Co	8,500	
George A. Alden & Co	5,500	14,000

SEPT. 20.—By the *Majestic*=Liverpool:

George A. Alden & Co	10,000	
Livesey & Co	5,000	
Crude Rubber Co	1,000	16,000

EAST INDIAN.

POUNDS.

AUG. 27.—By the *Manitou*=London:

J. W. Greene & Co	37,000	
D. P. Urulkshank	10,000	
George A. Alden & Co	11,000	58,000

AUG. 31.—By the *Armenia*=Singapore:

Reimers & Co	37,500	
J. W. Greene & Co	8,500	
Reimers & Co. (Pontianak)	255,000	
Albert T. Morse & Co. (Pontianak)	3,000	301,000

SEPT. 4.—By the *Borie*=Liverpool:

Reimers & Co		15,000

SEPT. 10.—By the *Europe*=London:

Otto G. Mayer & Co. (Pontianak)		180,000

EAST INDIAN—Continued.

SEPT. 10.—By the *Ettrickdale*=Singapore:

George A. Alden & Co	9,500	
George A. Alden & Co. (Pontianak)	112,000	121,500

SEPT. 10.—By the *Marquette*=London:

Otto G. Mayer & Co. (Pontianak)		40,000

SEPT. 17.—By the *Ainwick*=Calcutta:

George A. Alden & Co		6,000

GUTTA-PERCHA.

POUNDS.

AUG. 31.—By the *Armenia*=Singapore:

Reimers & Co		6,500

AUG. 21.—By the *Cap Frio*=Hamburg:

R. Seltau & Co		10,000

SEPT. 17.—By the *Cymric*=Liverpool:

Robert Crooks & Co		5,000

CUSTOM HOUSE FIGURES.

PORT OF NEW YORK—AUGUST.

Imports:	POUNDS.	VALUE.
India-rubber	3,038,214	$1,600,053
Gutta-percha	1,110	1,490
Gutta-jelatong (Pontianak)	.....	.....
Total	3,039,324	$1,601,543
Exports:		
India-rubber	49,198	$34,305
Reclaimed rubber	182,941	27,564
Rubber Scrap Imported	1,392,546	$66,713

BOSTON ARRIVALS.

POUNDS.

AUG. 9.—By the *Saxonia*=Liverpool:

George A. Alden & Co.—Africans	614
Reimers & Co.—Africans	12,904

AUG. 20.—By the *Kansas*=Liverpool:

Reimers & Co.—Fine Pará	56,453
George A. Alden & Co.—Africans	10,278

AUG. 25.—By the *Sachem*=Liverpool:

Reimers & Co.—Caucho	35,646

AUG. 25.—By the *Friesland*=Antwerp via New York:

Reimers & Co. (Africans)	11,023

AUG. 28.—By the *Columbian*=Liverpool:

George A. Alden & Co.—Coarse Pará	1,054

	POUNDS.	VALUE.
Total, January	105,946	$69,329
Total, February	109,763	65,290
Total, March	81,489	55,950
Total, April	141,398	90,607
Total, May	53,285	36,126
Total, June	39,376	22,016
Total, July	115,865	56,897
Total, August	127,972	71,851

GUTTA-PERCHA.

POUNDS.

AUG. 15.—By the *Cambrian*=London:

G. A. Alden & Co	2,330

AUGUST EXPORTS OF INDIA-RUBBER FROM PARA.

IN KILOGRAMS. 100 KILOGRAMS=220 POUNDS.

EXPORTERS.	UNITED STATES.					EUROPE.					TOTAL.
	FINE.	MEDIUM.	COARSE.	CAUCHO.	TOTAL.	FINE.	MEDIUM.	COARSE.	CAUCHO.	TOTAL.	
Cmok, Prüsse & Co	88,759	16,367	44,740	—	149,866	96,560	26,520	21,920	3,520	148,520	298,386
Adelbert H. Alden	142,490	12,920	74,833	760	231,003	35,860	5,170	26,040	—	67,070	298,073
The Sears Pará Rubber Co	86,020	8,500	35,460	—	129,980	—	—	—	—	—	129,980
Frank da Costa & Co	7,598	704	8,448	2,010	18,760	25,176	3,310	37,792	—	66,278	85,038
Denis Crouan	—	—	15,680	—	15,680	59,330	4,590	2,080	—	66,000	81,680
Rudolf Zietz	960	526	5,420	—	6,906	40,405	4,476	12,705	—	57,586	64,492
Kanthack & Co	—	—	—	—	—	14,744	5,636	5,391	—	25,771	25,771
R. Suarez	—	—	—	—	—	16,425	4,817	—	—	21,242	21,242
Singlehurst, Brocklehurst & Co.	—	—	—	—	—	9,873	2,966	1,225	—	14,064	14,064
Pires, Teixeira & Co	1,458	—	619	—	2,077	—	—	—	—	—	2,077
Direct from Iquitos	—	—	—	—	—	132	—	—	33,113	33,245	33,245
Direct from Manáos	49,678	6,622	8,144	4,927	69,371	188,258	29,474	39,006	34,839	291,577	360,948
Total for August	376,963	45,639	193,344	7,697	623,643	486,763	86,959	146,159	71,472	791,353	1,414,996
Total for July	148,853	28,698	102,431	28,796	308,748	151,995	24,461	119,417	49,211	345,084	653,832
Total, January–June	2,633,971	467,106	1,603,010	471,294	5,175,381	3,050,250	636,986	1,177,656	490,236	5,355,128	10,530,509
Total for 1900	3,159,787	541,443	1,898,785	507,757	6,107,772	3,689,008	748,406	1,443,232	610,919	6,491,565	12,599,337

Cable Address, "Gattaperch, Toronto."

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"Eureka," "Paragon" and other High Grades of Cotton Fire Hose.
"Goodrich" and **"Hartford"** Single Tube Bicycle Tires.

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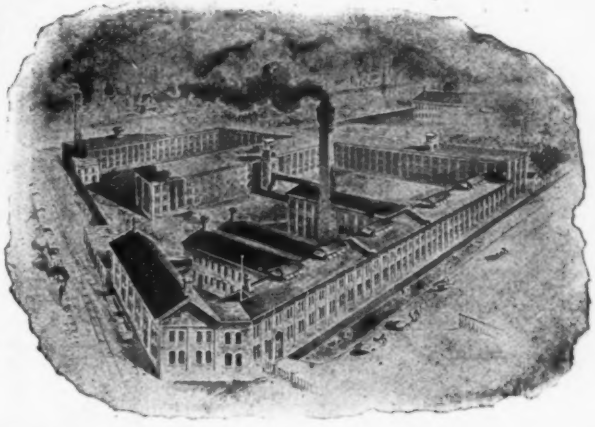

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BELTING - MATTING - CLOTHING
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THE GUTTA PERCHA & RUBBER MFG. CO. OF TORONTO, LTD.

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= = THE = =

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HIGHEST GRADE

RUBBER BOOTS, SHOES, AND CLOTHING.

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Roofs and iron work properly painted have not required repainting in ten to twenty years. Time only can prove the value of a paint, and Dixon's Silica-Graphite Paint is the ONLY graphite paint with a satisfactory time record.

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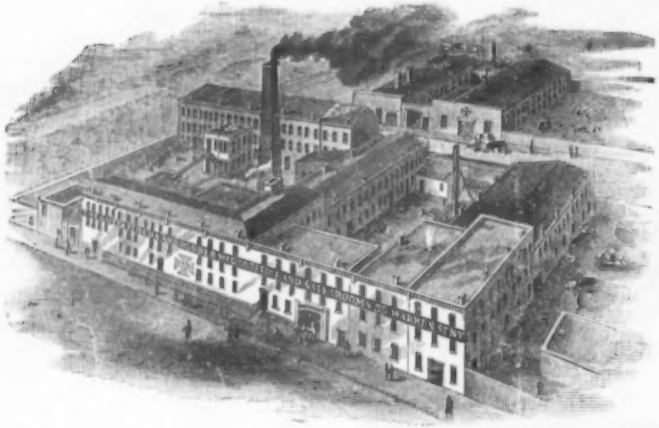

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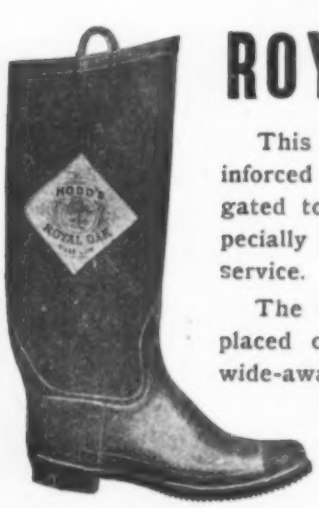

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This boot is made with a reinforced duck vamp and corrugated toe cap, and is made especially for the hardest kind of service.

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